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ABSTRACT

Twenty-five issues papers of the Governor's Commission on the Future of Higher Education in Michigan are presented. The document is divided into three sections: section one provides base information on the trends and indicators which evolve beyond the control of higher education; section two discusses those public policy issues which must be considered when deliberating the future of higher education; and section three discusses Commission decisions. Titles include the following: "Trends, Issues, and Decisions Facing Michigan's Higher Education System;" "Postsecondary Enrollments, United States and Michigan Summary of Historical Data and Projections;" "Equal Access for Women, Minorities and Handicappers in Higher Education;" "Issues and Problems Regarding Financial Access to Higher Education in Michigan;" "To the Year 2000: Future Trends and Implications for Higher Education;" "State Level Academic Program Review and Approval: 1984 Update;" "An Analysis of the Distribution of Programs at Michigan Colleges and Universities;" "Overview of Educational Television in Michigan;" "Michigan Society of Professional Engineers Taskforce Report on Infrastructure;" "Comparative Study on Higher Education Finance;" "1982-83 Michigan College and University Undergraduate Student Financial Aid Survey;" "Higher Education and State Economic Growth: A Strategy for Strengthening the Research, Public Service and Job Training Capabilities of Colleges and Universities; and "Background and Policy Papers: Higher Education Roles and Missions." (SW)

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THE COMPLETE ISSUE PAPERS
OF THE

GOVERNOR'S COMMISSION ON THE FUTURE OF HIGHER EDUCATION IN MICHIGAN

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December 13, 1984

James K. Robinson, Chairman

INTRODUCTION

The Commission on the Future of Higher Education was created by Executive Order of Governor James J. Blanchard in September, 1983. Its mandate was to conduct a thorough study of Michigan's system of Higher Education and its role in contributing to the state's revitalization and quality of life. The 25-member Commission was asked to recommend needs for higher education, to explore cost efficiency, to consider priority research areas for funding support and to assess an expanded public service role for public higher education institutions. It was also charged with examining the current status of public colleges and universities, their roles and missions, and with developing recommendations for state policy, including proposed legislation and budget needs.

In responding to its charge, the Commission examined quantitative trends including demographics, economics, appropriations and enrollments and focused on four fundamental policy questions:

- How can higher education become more affordable and accessible?
- How can higher education maintain diversity and reduce duplication?
- How can higher education contribute to Michigan's economic revitalization?
- How can the quality of higher education be enhanced?

The advice of all sectors of the higher education community, including students, was sought in a series of statewide public forums and campus visits. The Commission held monthly public meetings, committee meetings and work sessions and listened to national experts in various fields with direct bearing on education.

A midyear progress report was issued on April 4, 1984 and the Commission's final document, Putting Our Minds Together: New Directions for Michigan Higher Education, was presented to the Governor on December 13, 1984. This final document laid out specific recommendations to the Governor, the Legislature and the people of Michigan, defining problem areas, the key issues, and methods of funding and implementing the recommendations.

This is a compilation of the background papers prepared by the Commission staff and by specialists in the field of education that have been used and referred to in the Commission's Midyear Progress Report: Agenda for Discussion, and in the final report, Putting Our Minds Together: New Directions for Michigan Higher Education. Additional copies of this compilation, The Complete Issue Papers of the Governor's Commission on the Future of Higher Education, 1984, are available for a charge from the Michigan Department of Management and Budget.

James K. Robinson, Chairman
Patricia R. Widmayer, Executive Director

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TRENDS, ISSUES AND DECISIONS FACING MICHIGAN'S HIGHER EDUCATION SYSTEM

STATE OF MICHIGAN

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COMMISSION ON THE FUTURE OF HIGHER EDUCATION
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TRENDS, ISSUES AND DECISIONS FACING MICHIGAN'S HIGHER EDUCATION SYSTEM:

A STAFF DISCUSSION PAPER

Prepared For
GOVERNOR'S COMMISSION ON THE FUTURE OF HIGHER EDUCATION
November 1983

INTRODUCTION

Higher education questions are rooted within a complex matrix of issues and trends. This paper, "Trends, Issues and Decisions Facing Michigan's Higher Education System," has been prepared to put the Commission's work in perspective and to stimulate discussion among Commissioners regarding basic data, core public policy questions and final decision areas. The paper attempts to provide a preliminary point of departure; it synthesizes and summarizes information for discussion, modification and debate.

This paper is divided into three sections, two of which concentrate on aspects of the matrix surrounding higher education: its trends and its issues. The third section discusses Commission decisions.

In this introduction the "matrix" metaphor is consciously used because it aptly portrays the multiplicity of points which must be considered in defining a course for higher education. In order to render recommendations on the future of higher education, Commissioners will have to achieve a harmony between changing trends or external factors (the relationship between the economy and population patterns) and a familiar set of public policy issues (accessibility, affordability, excellence and systemwide efficiency).

Section one of the paper provides base information on the trends and indicators which evolve beyond the control of higher education. These factors cyclically fluctuate and strongly resist adjustment--they will require adaptation on the part of individual institutions and state government. Section one discusses three current demographic and economic trends which potentially threaten the status quo in higher education:

.. Shifting population patterns will influence higher education's enrollment levels and its clientele groups.

.. Unstable state and national economies will exert a conservative influence on higher education revenues and expenditures.

.. State, national and international economic fluctuations will modify the nature and capacities of the labor market.

These changing forces directly affect higher education--its purposes, its perceived social value, its investment potential and its overall structure. When jobs, students and revenues are in abundant supply, higher education is allowed vigorous expansion to satisfy demand. When these variables quantitatively decline or plateau, attitudes about higher education become more circumspect. It is at these times that representative bodies need to survey the changing landscape, re-evaluate the purposes of postsecondary education, articulate public values and stimulate the system to become qualitatively compatible with its external climate. For these reasons, preliminary information on enrollments and appropriations has been provided.

Section two of the paper discusses those public policy issues which must be considered when deliberating the future of higher education. A review of previous higher education studies reveals that a common set of issues has concerned the public for over three decades. Unlike the indicators discussed above, decisionmakers and advisors are able to exert some level of control over the "issues axis" of the higher education matrix. In some states, this has been done by defining purposes and goals and setting systemwide priorities. Systemwide, four areas of ongoing public concern present themselves for deliberation and inclusion in the Commission's plan for higher education:

.. How can higher education become more affordable and accessible?

.. How can higher education maintain diversity and reduce duplication?

.. How can higher education contribute to Michigan's economic revitalization?

.. How can the quality of higher education be enhanced?

Section three of the paper summarizes those decisions which will structure the Commission's final recommendations. Based on interviews with individual Commissioners, state decision-makers and higher education leaders, the content of Governor Blanchard's charge to the Commission can be distilled into two "bottom line" questions:

.. FINANCING CRITERIA. What statewide needs and policies should be used to guide the allocation of future higher education resources? Inherent in this question are uncertainties about what sources should be used to finance higher education and the best way to evaluate and finance capital outlay requests.

.. STRUCTURAL EFFICIENCY. How can the higher education system be efficiently structured to maintain the excellence of the overall enterprise and to ensure that future state needs are satisfied?

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SECTION ONE

EXTERNAL FORCES AFFECTING HIGHER EDUCATION

The status quo in higher education has its roots in the social and economic circumstances of the past. In Michigan over the past two decades, fiscal solvency and expansion have generally characterized the public sector and the overall higher education enterprise. In the main, public colleges and universities and their private counterparts have grown in terms of every traditional measure: numbers of campuses, construction outlays, numbers of programs, libraries, library acquisitions and faculty. Community colleges have proliferated, as well, in the last three decades. Since the 1960s, higher education has drawn students from an abundant pool of 18-to-21-year-olds--a pool of applicants expanded by members of the baby boom generation.

Lately, as the state and national economies have slowed down, and as higher education constituencies have begun to change qualitatively and quantitatively, a new element of uncertainty has begun to cast a shadow over short- and long-term strategies for higher education. This section discusses the interplay between the state economy, public appropriations, and enrollments. This information is intended to provide a useful current perspective by drawing on data from the past; it also summarizes future projections as a way to orient the Commission to its seventeen-year planning mission.

ECONOMICS AND PUBLIC APPROPRIATIONS

Michigan's economy, in spite of recent periods of sustained unemployment, retains its base of industry and agriculture. A recent resurgence in the automobile industry has resulted in a new level of growth and profits. Gubernatorial efforts to diversify and revitalize the state's economy promise to enhance the competitive posture of Michigan business and industry in the years to come. Nevertheless, the forces of state and national recession have not been completely reversed. Michigan's severe decline may augur a slow economic recovery. Past unemployment has heightened the demand for basic health and welfare services and recent state tax increases are temporary in nature. These facts exert a direct effect on the funding for higher education--they signal the need for cautious planning, as well.

National data on state appropriations for 1983-84 reveal important information about the interplay between funding and inflation. In his annual survey of legislative appropriations for higher education, M. M. Chambers reports that, despite financial difficulties, support for higher education in the fifty states increased five percent between 1982 and 1983; state support increased 12 percent during the two-year period from 1982 to 1984. Although these percentage increases exceeded the 9.8 percent inflation rate prevailing during the two-year period, inflated prices diluted the 12 percent gross increase to a real increase of only two percent. Overall, these national increases are the smallest received by higher education since 1960.

According to the Chambers study, Michigan achieved the following rankings when compared to the other forty-nine states:

> Michigan ranked seventh in total appropriations for higher education;* 44th with its five percent increase in appropriations between 1982 and 1984; Michigan ranked 34th with its $96 in state appropriations per capita and Michigan ranked 36th with its $8.50 in state appropriations per $1,000 of personal income.

The following table longitudinally summarizes the state's investment in public colleges and universities from 1973 to 1983.

TRENDS IN STATE COLLEGE AND UNIVERSITY EXPENDITURES: 1973-1983
(Institutional Fiscal Years)

Fiscal Year	Institutional GF Exp. (Millions)	Increase (Percent)	State GF-GP Support (Millions)	Increase (Percent)	Percent GF-GP of Total Exp.
1973	$ 531	9.1	$353	14.8	66.4
1974	591	11.3	392	10.9	66.2
1975	645	9.0	422	7.8	65.5
1976	675	4.8	440	4.2	65.1
1977	719	6.5	453	3.0	63.0
1978	784	9.1	504	11.2	64.2
1980	942	10.0	615	9.2	65.3
1981	991	5.3	595	-3.3	60.0
1982	1,052	6.2	621	4.4	59.0
1983**	1,106	5.1	624	.5	56.4
1984**			704	12.8	

Source: Office of the Budget, Department of Management and Budget

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*It should be noted that the fiscal year 1984 appropriation figure used by Chambers, $888 million, is understated by about $20 million. This adjustment, however, only marginally affects Michigan's rankings on the various scales.

**Fiscal years 1983 and 1984 figures represent estimated amounts. Previous year figures represent actual amounts.

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As the preceding table shows, state appropriations provide only a portion, although a major portion of colleges' general fund expenditures. Consequently, the level of state funding is not necessarily a direct measure of the level of total institutional expenditures. Total higher education expenditures have continued to increase by at least five percent a year and are likely to increase at an even higher rate in 1984 because of the restoration by supplemental appropriation of the $80 million 1982 Executive Order reduction and the 7 to 9 percent fiscal year 1984 state appropriation increases.

Michigan's recent economic distress has raised the degree to which all sectors of the economy are competing for both scarce public resources and for philanthropic contributions. Legislators have been pressured to increase state appropriations for many state services. Michigan legislators, like their colleagues in many other states, levied temporary state tax increases and thereby increased state support for higher education and other programs. Because the state income tax increase is temporary, higher education will soon be left to compete with other state services for increasingly sparse state dollars.

Inflation has a significant impact on higher education for two reasons. First, it is harder for colleges and universities to pass cost increases on to their customers. At some point, students shift from high- to low-priced institutions, from full- to part-time status, from resident to commuter status or they withdraw from college altogether. Second, higher education cannot easily reduce overhead in proportion to declining enrollments. Therefore, added funds are often needed to educate fewer students.

Recent federal funding policies have resulted in higher education resources being transferred to defense programs and certain entitlements.

Cuts in public support for social programs have placed an unprecedented burden on sources of private giving. At least some portion of the gifts which would formerly have been available to support public and private institutions is now being directed to other purposes.

As enrollment patterns and tuition revenues change, as the state income tax rate fluctuates, as federal revenues decline, as institutional endowment pools face changing investment markets, as overall competition for public revenues becomes keener, the need to evaluate the state's higher education goals becomes increasingly urgent.

ENROLLMENTS

The following chart divides historical data on postsecondary enrollments in Michigan by headcount. Complete data on fiscal-year-equated students (FYES) are not available for several years (1978, 1982 and 1983). The following analysis, therefore only applies to headcount enrollments.

Headcount Enrollment Data

1978-1983

	1978	1979	1980	1981	1982	1983
Public 4-Yr.:	235,953	239,715	242,274	234,054	226,457	227,389*
Public 2-Yr.:	187,649	209,727	209,481	211,964	213,204	218,100*
Privates:	62,810	64,473	66,390	68,043	68,752	72,758*
Totals:	486,412	513,915	518,145	514,061	508,413	518,247*

*Preliminary figures

Source: Staff of Governor's Commission on the Future of Higher Education, 1983.

The data on headcount enrollments show the following:

1. Overall, enrollment changes vary by type of institution. From 1978 to 1983 the following changes occured in headcount enrollments:

   * Public four-year institutions declined by about 3.6 percent; public two-year institutions increased by 16.2 percent; and

   * Private institutions increased by 15.8 percent.

2. The mix of total postsecondary enrollments has shifted. The distribution of enrollments has changed as follows:

   * Public four-year institutions declined from 48.5 percent to 43.9 percent of total enrollments (4.6 percentage points);

   * Public two-year institutions increased their share of the enrollment pie from 38.6 to 42.1 percent (3.5 percentage points); and

   * Private institutions increased from 12.9 percent of the total to 14.0 percent (1.1 percentage points).

Projection of enrollments from 1980 to 2000 vary considerably depending on

1. The assumptions on which the estimates are based, and
2. The measure of headcount or full-time equivalent enrollments (the latter is measured by credit hour).

Individual studies generally present a range of estimates: "high," "low" and "most likely" or "intermediate." The most optimistic recent projections are for growth rates in Michigan headcount enrollments of +.4 percent from 1980 to 2000. Lowest estimates project a decline of 28.0 percent. "Intermediate" or "most likely" estimates are that enrollments will decline by 5-25 percent. The following table compares the projections discussed above to the national projections of the Carnegie Commission.

RANGE OF RECENT PROJECTIONS OF TOTAL HEADCOUNT ENROLLMENTS
Percent Change From 1980 Actual to 2000 Projected

	High (Optimistic)	Intermediate	Low
National (Carnegie Commission)	-5.0 [a]	-10.0 [a]	-25.0 [a]
Michigan	+ .4 [b]	-16.0 [c]	-28.0 [c]

Variables that can significantly influence the outcome of enrollment projections include the following:

- Demographics, particularly the birthrate, population migration, and the distribution by age and sex, and protected group status.
- The economy, including the unemployment rate and the effects of inflation.
- Participation rates by sex, age and protected group status.
- Retention rates of students who are matriculating.
- Tuition levels relative to personal income.
- Availability of federal and state financial aid.

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[a] Carnegie Commission. 3,000 Futures (1981)

[b] Michigan Department of Education: Enrollment Potential for Michigan Colleges and Universities to the Year 2,000. (1980).

[c] James R. Moor, Enrollment Projections to the Year 2000 (1982).

- Professional requirements.

- Part-time or full-time enrollments

To a great extent, demographics and the economy are "external" factors in that they are not easily influenced by public policy. Public policy has considerable impact, however, on participation and retention rates, tuition levels, and the availability of state and federal financial aid.

To assist the Commission in forecasting enrollment trends in the state system, working groups have been organized to evaluate existing models and forecasting techniques. Information on the comparative merit of various studies will be available for Commission review and discussion. It is hoped that the Commission will select, from the available options, a technique which includes the most appropriate variables and offers the greatest reliability in predicting the pattern of future college and university attendance.

SECTION TWO:

ISSUES FACING HIGHER EDUCATION

ISSUE ONE: HOW CAN HIGHER EDUCATION BECOME MORE AFFORDABLE AND ACCESSIBLE?

Over time, the public has agreed that one of the basic purposes of Michigan's educational system is to make a college education affordable and accessible to the maximum number of people in the state. Achievement of this goal offers benefits to individual citizens and society as a whole. Qualified Michigan residents who desire a college education reap the rewards of personal development, career advancement and mobility, both social and economic. As a state, Michigan stands to enjoy the rewards associated with having an educated citizenry and a skilled work force.

The goal of equality of access cannot be achieved if tuition rates exceed reasonable limits, if financial aid levels fall below a useful level, if women and minorities are not recruited and supported by higher education institutions or if physical barriers, including geographical expanses, separate students from desired academic programs.

Financial Access

Financial assistance programs of various kinds support the goal of access to an affordable postsecondary education. Current federal programs include: the Pell Grant (formerly known as the Basic Educational Opportunity Grant) Program, which provides need-based grants to undergraduates; the Guaranteed Student Loan Program, which makes low-interest, deferred payment loans available to undergraduate, graduate and professional students; the Supplemental Educational Opportunity Grants Program, which assists students with exceptional need; the College Work-Study Program; and the National Direct Student Loan Program.

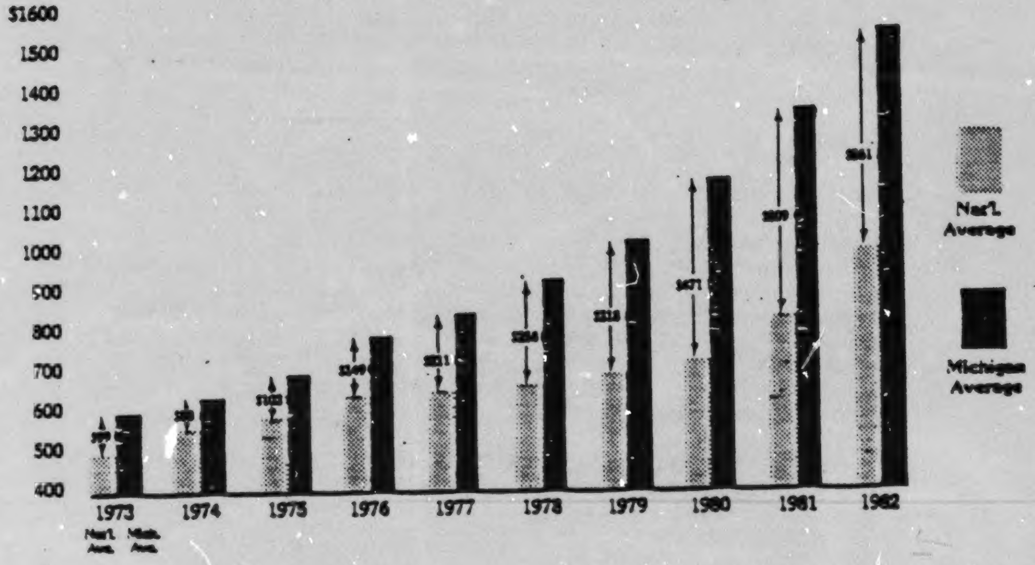
State programs include: Competitive scholarships which are provided to public and independent college students on the basis of financial need and academic performance; and tuition grants and tuition differential grants which are given only to private college students.

Unlike financial aid which is granted directly to students, tuition is a source of operating revenues for all of Michigan's colleges and universities. For institutions, tuition increases can counterbalance the impact of marginal state funding increases and inflated operating costs. As higher education's share of the total state budget has declined, students and their families have been held increasingly responsible for financing higher education through rising tuition payments.

For example, between fiscal years 1979 and 1982, the state's share of public college and university operating revenues declined 6.6 percent (from 65.5 percent to 58.9 percent). During the same period, student tuition and fees increased 5.5 percent (from 27.6 percent to 33.1 percent). Similarly, over the same period, the state's share of community college revenues declined from 47 percent to 37 percent, while student fees increased from 24 percent to 31 percent and local funding increased from 24 percent to 26 percent.

The trend toward escalating tuition rates emerged in the early 1970s and continues today with public college and university tuition rates in Michigan being among the highest in the nation. As the following table shows, average tuition rates at Michigan's public colleges and universities are now over $560 more than the national average. What is not known, when comparing Michigan tuition rates with those in other states, is dollar-for-dollar what students receive in exchange for their money.

AVERAGE TUITION RATES (UNWEIGHTED AVERAGE FOR FALL TERM)
PUBLIC FOUR-YEAR COLLEGES & UNIVERSITIES
NATIONAL & MICHIGAN AVERAGES, 1973-1982



Source: The State Investment in Higher Education 1983. President's Council, State Colleges and Universities

Tuition variances between the different higher education sectors have grown over time, with independent colleges and universities being the highest in cost of the three sectors and community colleges underpricing the other two sectors consistently. Tuition increases by public colleges and universities have brought them closer to parity with the cost of private institutions. This situation threatens to affect each student's freedom of choice, as economics could potentially force selection on the basis of cost alone.

Questions pertinent to the Commission's charge include: Is there a "need gap" between available aid and total educational costs? How do federal and state financial aid policies affect student access? How do tuition rates correlate with the quality of learning purchased by students?

Geographic Access

Michigan's higher education system is geographically diversified, with public and private colleges and universities, and community colleges, located within commuting distance from most of the state's citizens.

Realization of the goal of geographic accessibility requires that attention is given to the needs of traditional and non-traditional students. In addition to residential programs on permanent campuses, the statewide availability of off-campus offerings, non-traditional and lifelong learning is a factor in assuring that students have maximum access and freedom of choice. Unless course offerings, locations and times are adjusted to conform to older students' needs and schedules, their access may be constrained. The higher education literature shows that non-traditional students (older adults) who are trying to update their skills or change careers, enroll at urban campuses near their homes and near their worksites. The literature also documents that urban community colleges and arts and sciences colleges draw more of their enrollments from within commuting distance. Collaborative training and instruction arrangements between higher education institutions, community colleges and secondary educational institutions would expand the local availability of courses, especially in urban areas where convenient access is a prime determinant of student participation.

Geographic access does not necessarily require that programs are distributed in a duplicative manner which can dissipate resources and dilute quality. Alternatives to a proliferation of programs might include increased transporation funding and more off-campus satellite arrangements. Finally, for the physically handicapped, distance and architecture can prevent access. Federal and state statutes offer guidance to institutions attempting to provide handicapped students unfettered access to academic and extracurricular programs.

Equality of Access

Access and affordability are closely intertwined as related to low-income individuals, minorities and women. Academically competitive students from these groups may find that cost alone can block their access to advanced learning. However, long before many protected group members confront a cost barrier, they may encounter subtle admission barriers which usher them out of the pool of competitive students. Admission barriers, often rooted in the secondary school experience, can be removed if equality of access is seen as a goal meriting resources and evaluation.

During the junior high school years, many school systems utilize one-to-one recruitment programs and on-campus orientations as ways

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to familiarize low-income and minority students with the higher education experience. During college matriculation, representative numbers of both female and minority faculty and students help retain nonwhite enrollees. Intensive targeted remedial courses, counseling and other support activities can raise the chance of academic success if initiated early and carried out consistently. The goal of these efforts is to increase the numbers of minority students who complete high school and to retain minority students until they successfully complete their baccalaureate requirements.

Undergraduate experiences for protected group students can include programs to stimulate interest in graduate and professional programs. If Michigan's work force is to become representative of its racially diverse citizenry, the roads to valued occupations must be paved by higher education. If colleges and universities are to represent society's equal opportunity goals, protected group students must be trained to compete for faculty and administrative positions.

Student body diversity and student retention are goals of higher education requiring commitment and resources. Information on current recruitment practices, successes and placement rates will indicate the degree to which higher education is extending its opportunities to all of Michigan's citizens.

Questions pertinent to the Commission's charge include: How successful is higher education in recruiting, hiring and promoting protected group faculty members and administrators? Are support services that are intended to retain protected group students adequate and efficacious? Are physically handicapped citizens impeded in their access to higher education? How successful are career counseling and job placement activities for protected group graduates?

ISSUE TWO: HOW CAN HIGHER EDUCATION MAINTAIN DIVERSITY AND REDUCE DUPLICATION?

Michigan's higher education system is characterized by a valuable diversity of institutional types, institutional missions, program offerings and geographic locations. The state's 100 higher education institutions fall into three categories: 13 state colleges and universities on 15 campuses, 29 community colleges and 56 independent colleges and universities. An excellent illustration of the richness of missions and offerings is reflected in the coexistence of 3 major research universities, 37 colleges of liberal arts, 5 colleges of arts and/or religious studies, 4 medical schools, 11 business schools, 1 school of optometry, 2 dental schools, 5 law schools, 1 veterinary medical school, and 4 institutions dedicated exclusively to engineering and/or technology.

There is broad public agreement that diversity is a precious attribute which should describe our higher education system of the future. In order to know when diversification sheds its positive qualities and creates undesirable and wasteful duplication, the Commission may want to examine how the distribution of programs relates to state and student needs. Circumstances clearly demand that a balance be achieved in higher education--one which enriches diversity while reducing repetition of purpose. True diversity would allow those seeking advanced learning to exert maximum freedom of choice among affordable, accessible options. In addition, it would allow institutions freedom to experiment and change within reasonable limits of accountability and efficiency.

Basic questions about linkages connecting community colleges, private colleges and public four-year institutions are essential to any discussion of balance. Identifying specialties appropriate to each sector of higher education is important in building a cohesive future system of learning. The relative roles of basic knowledge curricula and technical training courses will dictate the character of Michigan society and the individual citizens who move the economy.

The Role of Private Institutions

Fifty-six of Michigan's 100 higher education insitutions are independent colleges and universities; they function as an important counterpart to the publicly-supported network of schools. On a headcount basis, the private sector currently enrolls 14 percent of all Michigan students.

In the 1960s and 1970s Michigan and other states discovered that paying private colleges to take students was an alternative to expanding public institutions. As a result, several states initiated subsidy programs for private colleges. Through these subsidy opportunities in 1983, private institutions or their students received nearly $40 million in assistance through the State Competitive Scholarship Program, the State Tuition Grant and Tuition Differential Grant Programs (exclusively for students attending private institutions). Private institutions are also reimbursed for each associate, bachelor, master, dental and law degree awarded.

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The question of public revenues has special relevance for those private institutions which are considered much more at risk than public institutions in periods of contraction. Some types of private institutions face serious future threats because of the cost gap between them and their public counterparts. Because the state provides direct support for public institutions, average student tuition and fees are much lower than in the private sector. However, State Tuition Grant Programs make it easier for students in independent colleges to finance their costlier educations.

The overall higher education system depends on its private institutions to provide diversity and to enhance the quality of higher education in several ways. To quote Clark Kerr:

> "Their academic standards, their reputation, and their autonomy make it easier for us to preserve autonomy in the public sector. Their standards of academic freedom protect academic freedom in every place; their ability to experiment makes it easier for others to experiment."[1]

Questions pertinent to the charge of the Commission are: To what degree should Michigan financially support private sector institutions, more or less? How, if at all, should these institutions be held accountable for how they expend public funds? How should higher education planning be carried out so as to incorporate private sector institutions?

Community Colleges

Since 1914 in Michigan, the growth of community colleges has offered thousands of motivated individuals an opportunity to pursue two-year programs of adult education, vocational training, terminal general education, technical preparation and community service. Public community colleges have become well known for their relatively low prices, their ability to serve the adult part-time population, and their flexibility in shifting program offerings rapidly in response to changing demands.

Two-year and four-year institutions often occupy the same "niche," i.e., offer the same programs to similar students in the same geographic area. As a matter of fact, questions are being raised about those things which community colleges "do best" or "would do more appropriately" than other types of institutions. These questions emerge because current fiscal and enrollment constraints may mean that duplication within "niches" is no longer considered wise.

Community colleges are considered strong in providing courses accredited for transfer. As such, they serve as a point of transfer for students who complete a two-year course of study and wish to enroll in a four-year baccalaureate institution. Based on the appeal of this educational strategy, it appears that bridges of this type between two- and four-year institutions meet an important need. Such relationships are also a good example of regional cooperation.

It is often argued that community colleges would be the strongest sites for job training programs, especially in light of their ability to provide vocational education to so many. As economic fluctuations continue to influence the labor market, public pressure is mounting to identify appropriate job re-training facilities and offer permanent programs. The community college network is one possible location for the retraining of unemployed industrial workers, teachers and so on. Community colleges are also suggested as one of three sites for programs to remedy the academic weaknesses of current higher education students. Other sites capable of carrying out remedial education include four-year institutions and secondary schools

Questions pertinent to the charge of the Commission include: Can four-year institutions and community colleges achieve a balance as they compete to enroll transfer students? Where are remedial education programs best located? What are the most appropriate sites for job training and retraining programs?

Liberal Arts Courses and Degrees

Arts and humanities perform a role in higher education missions which is both academic and nonacademic in nature. From an academic or curricular point of view, liberal arts courses and degrees produce students with intellectual abilities and an appreciation of the human experience. However, a recent trend toward "careerism" or "vocationalism" in higher education has stirred up a controversy about the relative worth of liberal arts knowledge versus technical knowledge. The manner in which this controversy is resolved will affect the very meaning of higher learning and the basic qualities of Michigan's citizenry.

It is frequently suggested that because of technological advances, business and industry will require a greater supply of technically-trained college graduates in the year 2000. As the labor market becomes saturated with "baby boom" college graduates, many new liberal arts graduates find themselves in possession of degrees which are only marginally marketable for jobs which traditionally required a college degree.

As a consequence of these perceptions, many people recommend that higher education should shift its emphasis from liberal arts courses to programs having career or technical orientations. There is pressure to deemphasize liberal arts and humanities courses in anticipation that recipients of these degrees will be unable to secure jobs in the future marketplace.

Every professional needs the basic knowledge and critical thinking skills provided by liberal arts coursework. The relative emphasis of liberal arts versus technical skills may simply be a question of timing: when should arts and humanities learnings be rounded out with specialized, technical knowledge? Terrell H. Bell, U. S. Secretary of Education, agrees with the need for a carefully-timed educational approach which balances liberal arts and technical courses. He is quoted in the Chronicle of Higher Education as saying he is:

> ". . .concerned about the trend toward earlier and earlier entry of college students into job-related specialization," (often at the expense of courses in the arts and humanities). "We must beware of the crowding out of student time for the liberal arts because of the professional schools' propensity to demand more and more time of students,. . ."[2]

There are those who argue against placing an undue emphasis on job-related education. First, they underscore the social importance of maintaining a cadre of liberally educated citizens--citizens who understand human relations, human values and themselves. They give this social goal weighted value as they compare the two educational approaches. Second, cautious future planners warn that liberal arts resources should not be precipitously shifted to technical programs without accounting for the possibility that the demand for technical training may be a transient one or that liberal arts degrees, themselves, may be more marketable in future job markets.

Those aspects of higher education which concern the arts and culture go beyond the classroom. As such, many institutions contribute greatly to the cultural activity of surrounding communities. The quality of life of Michigan citizens has historically been deepened by cultural activities and public service efforts sponsored or supported by higher education. These programs have exposed citizens of all ages to priceless enrichment opportunities and have contributed to community sophistication, cultural sensitivity and human diversity.

Questions pertinent to the charge of the Commission include: What elements are necessary for a core curriculum to balance arts, humanities and technical training? What is the expected future marketability of liberal arts degrees? How has the perceived value of liberal arts degrees changed? Should state planners include public service and cultural programs in their diliberations? If so, how?

Inter-Institutional Cooperation

In response to a new socio-economc climate, higher education institutions have undertaken noteworthy administrative adaptations. In the mid-1970s, enrollments leveled off. Institutions, therefore, improved management and budget practices, began more aggressive recruitment activities and initiated program changes so that individual campuses could respond to new demands. If pressures for retrenchment seem valid, the Commission may want to explore additional coordination options.

- Inventory of Capital Investments

  No comprehensive inventory of capital outlay expenditures currently exists. Without information on past, present and proposed capital expenditures, it is difficult to evaluate the need for equipment replacement, energy conservation and new buildings. The need for carefully selected new construction is sure to continue. However, with enrollments likely to decline or stabilize, maintenance, renovation, selected building replacement and modified usage represent economical options for addressing capital needs.

- Program Changes and Consolidation

  Program changes and consolidation have been encouraged on the part of individual institutions and between institutional campuses. Joint programming undertaken to date has been targeted at reducing low-priority, low-demand courses, reducing commitments in areas of weakness and freeing up resources for excellent programs with high student interest. Inter-institutional program trades and affiliations have also been accomplished regionally.

- Efficiency Incentives

  Since large systems tend to innovate slowly, incentives for serving new constituencies in new ways may be needed. The achievement of voluntary efficiencies can be rewarded much in the same way that promising research is encouraged by public planners.

Questions pertinent to the Commission's charge include: How can economies be achieved in satisfying capital outlay needs? Can the "bricks and mortar" facet of higher education be evaluated? Can institutions be rewarded for voluntarily achieving efficiencies?

ISSUE THREE: HOW CAN HIGHER EDUCATION CONTRIBUTE TO STATE ECONOMIC REVITALIZATON?

Like land, labor and capital, knowledge is a basic factor of production. Human capital is a crucial resource in any economy, and higher education is a channel through which investments in human capital are made. In an attempt to heal the economic wounds of the last four years and to prepare Michigan to thrive in the international economy of the Twenty-first Century, Governor Blanchard has initiated an array of economic revitalization projects. These strategies are aimed at creating jobs and stimulating the growth of business and industry. Higher education will be a natural partner in the implementation of efforts to make new technology available to industry, to target research areas of greatest benefit to the state and to enhance Michigan's market advantage in designated target industries.

The Cabinet Council on Jobs and Economic Development

Executive Order 1983-11, establishing the Commission, included a mandate that relationships between higher education and economic revitalization be addressed in the final report. This mandate will bring the Commission into close interaction with the work of other gubernatorally-appointed advisory bodies whose specific concerns are jobs, economic development and the business community.

The Cabinet Council on Jobs and Economic Development was established to coordinate and develop state economic development initiatives. This decision body is composed of the Lt. Governor and Directors of the Departments of Agriculture, Attorney General, Commerce (Chair), Education, Labor, Licensing and Regulation, Management and Budget, Natural Resources, Transportation and Treasury. The Cabinet Council functions through several subcommittees and working groups, including a Subcommittee on Higher Education and an auxiliary work group on higher education. Staff of the Commission has been invited to participate in those subcommittee efforts which seek to link higher education with business and industry. These efforts are summarized below.

* Technology Transfer

  Technology transfer "agents" have already been appointed at Michigan State University, Michigan Technological University, University of Michigan, Wayne State University and Western Michigan University to facilitate the link between their institutions and small, innovative firms. These technology transfer agents are identifying intellectual properties (such as patents or products under development) which can be licensed and sold, identifying research personnel and facilities which can be utilized by the business community and identifying administrative or legislative changes whose enactment will facilitate technology transfer objectives. University agents are coordinating their work with an individual in the Department of Commerce.

- Entreprenurial Activity by Universities

  This project is aimed at stimulating the link between small business and university personnel who can act as consultants. An examination of university and state government policies revealed that the state conflict of interest statute posed barriers for university consultants. Sponsors for an amendment to the conflict of interest statute are being sought so that college and university employees can enter into consulting contracts.

- Target Industries and Higher Education

  The Cabinet Council has selected four target industries toward which limited state resources will be channeled in order to enhance Michigan's current competitive advantage in these areas. Initial target industry selections include: forest products, auto suppliers, food processing and research/technology. It is asserted that, by receiving priority support, these industries can rapidly expand their share of the state's economy. The Cabinet Council and the Governor anticipate that the Commission will consider the best use of higher education resources in support of these industries.

- Research and Technology Centers of Excellence

  In order to mount coordinated attacks on specified technologies, the state is monitoring the development of two centers of excellence.

  Centers are expected to select research-based ideas having commercial potential and to shepherd them quickly to the point of applied research and industrial development.

  1. The Michigan Biotechnology Institute (MBI), formerly named the Molecular Biology Institute, is located at Michigan State University and concentrates on bioengineering, especially processes for transforming trees and plants into useful chemicals.

  2. The Industrial Technology Institute (ITI) in Ann Arbor was established in 1981 to develop Michigan's robotics industry.

Beyond support for Centers of Excellence, the Cabinet Council (and its advisory, private-sector counterpart, the Governor's Commission on Jobs and Economic Development) will continue searching for additional ways to transform university-based research into new technology, and to increase Michigan's share of federal research and development (R & D) funding.

Questions pertinent to the Commission's charge include: How can research funds be targeted at areas having the greatest potential to enhance the state's competitive advantage? How can higher education become a partner in rebuilding failing industries? What is the feasibility of developing free-standing research institutes able to use faculty from nearby institutions in achieving target research goals? How can higher education institutions gear up to meet tomorrow's labor market demands?

ISSUE FOUR: HOW CAN THE QUALITY OF HIGHER EDUCATION BE ENHANCED?

Michigan has, for years, maintained a national reputation based on the excellence of its higher education programs. Michigan citizens have traditionally considered support for higher education to be a priority. Consequently, citizens hold high expectations regarding the excellence of their college system, its role in their lives, their children's lives and in their communities. Whatever shape higher education takes in the future, its characteristic excellence should be fostered and preserved.

Colleges and universities perform an array of functions which enhance the overall social and economic quality of life. They educate a fraction of those in every population group, they conduct much of the basic scientific and applied research, they conduct policy analysis and maintain experts who serve society in many necessary ways, they play a basic role in preserving and interpreting the cultural heritage, they are the major patron of the arts and they carry out diverse public service endeavors. Support for higher education must be adequate enought for all these functions to be carried out with qualitative integrity.

An artifact of excellence in higher education is the national admiration and recognition which accompanies such an attribute. Michigan's system remains nationally respected. Some individual institutions are both nationally and internationally distinguished for their research, faculty, leadership and innovation. The public would agree that these facts should remain as true in the Twenty-first Century as they are in 1983.

In addition to the areas discussed above, secondary instruction has a special relationship with the qualitative well-being of higher education. National studies of primary and secondary education have urged state and local governments to improve the quality of K-12 education. Efforts of the National Commission on Excellence in Education, the Education Commission of the States, the Carnegie Commission and the Michigan Commission on High Schools have addressed secondary education problems and recommended curricular reforms, programs geared to special populations, enhanced performance standards for teachers and students, and the achievement of excellence by raising college entrance requirements.

Secondary and postsecondary institutions exist in a symbotic relationship in many areas. Because tomorrow's college enrollees will be drawn from today's primary schools, higher education has a vested interest in assuring that its future students are prepared for academic success. Colleges and universities train the individuals who teach in the K-12 system. Standards of admission and achievement for both secondary and postsecondary institutions are interactive. As such, standards in both sectors should transmit the same expectations regarding excellence and achievement;

institutions in both sectors should jointly stimulate students to achieve their maximum potential.

The issue of support is especially relevant to young people who, with early intervention to build self-esteem, could reap the benefits of a postsecondary degree. Minority students and those attending urban high schools should be benefitting from new teaching techniques and counseling programs to help them become competitive students who are able to graduate and succeed in the labor market of the future.

In order to build the strongest possible learning continuum, some believe that the resource allocation mechanisms for both sectors should be merged. Regardless of the feasibility of joint budgeting, it is valuable to acknowledge the linkages connecting secondary and postsecondary goals and outcomes.

Questions pertinent to the charge of the Commission include: What secondary education reforms are needed to improve the academic competence of tomorrow's college students? How can the quality of teacher preparation be enhanced? How useful to students and teachers are college entrance examinations, as they are currently administered? What linkages, between higher education and secondary education, can be undertaken to enhance the high school completion rates for protected group students?

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SECTION THREE:

CONCLUSION

At various times during the last three decades, attempts to achieve systemwide planning in Michigan higher education have been undertaken. The state has yet to implement major recommendations stemming from these efforts. Governor Blanchard's Commission has a unique opportunity to stimulate planning in higher education. The breadth of the charge encourages linkages and information gathering to address the question: how should state resources be allocated in the service of future higher education needs and goals?

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AN OVERVIEW OF PREVIOUS MICHIGAN HIGHER EDUCATION COMMISSIONS

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AN OVERVIEW OF PREVIOUS MICHIGAN HIGHER EDUCATION COMMISSIONS

Prepared For

THE GOVERNOR'S COMMISSION ON THE FUTURE OF HIGHER EDUCATION

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AN OVERVIEW OF PREVIOUS MICHIGAN HIGHER EDUCATION COMMISSIONS

Four central concepts have framed Michigan's historic commitment to postsecondary education. These concepts, first outlined in an 1817 proposal on developing a state university, have continued to shape higher education throughout the last 175 years. The need for the provision of a comprehensive public education system, the necessary support through taxation for postsecondary education, the maintenance of the nonsectarian public institutions, and the establishment of tuition levels which allow access to postsecondary education for all students have been central to the common view of the educational enterprise in Michigan. Each of Michigan's Constitutions has incorporated these four principles.

The reports of the five contemporary state-level commissions and the State Board of Education's State Plan have also been supportive of these concepts. The John Dale Russell Report (Control and Coordination of Higher Education in Michigan, 1958) was a systemwide review of Michigan postsecondary education, prompted by the swelling post-World War II enrollments in the state. Its recommendations (Appendix A) propose an expansion and coordination of the state system with increased legislative appropriations necessary to create quality programs throughout the state.

The central recommendations of the Russell report have been adopted including establishment of separate governing boards for all state postsecondary institutions, expansion of the system to include two additional four-year institutions and many more community colleges, increased faculty salaries, creation of a community college board to advise the State Board of Education, and increased state funding for tax-supported institutions to enable them to cope with anticipated enrollment increases. The report also recommended the creation of a coordinating agency to gather data about enrollments, staffing patterns, finances, facilities and programs; to provide estimates of yearly needs to the Legislature, and to advise institutions about operations and development. This coordinating agency was not established, but many of these functions are now handled by the Department of Management and Budget, the House and Senate Fiscal Agencies, and the Department of Education.

The Davis Report (Report on the Advisory Committee on University Branches, 1964) stressed the need for a preservation of institutional autonomy in a time of creation of new institutions. Thus, the Commission recommended that Oakland University become a separate institution, The University of Michigan--Dearborn remain a branch, and The University of Michigan--Flint, if further developed, become autonomous. The intent of the report was to discourage the creation of a single statewide university system with branch campuses throughout the state. Instead, the pattern of development has remained one of autonomy and independence.

The Citizens Committee on Higher Education (Final Report of the Citizens Committee on Higher Education, 1965) continued the emphasis on expansion of the system to meet enrollment needs in a time of expansion. The Committee recommended an emphasis on provision of easy geographical access to the state postsecondary system. Community colleges, which the committee envisioned as the major providers of technical and vocational programs,

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were a central concern. Thus, the Committee recommended (see Appendix B) further construction of community colleges, state assumption of a larger share of the capital outlay and instructional costs of community colleges in order to enhance their scope and role, extension of the provision of graduate programs throughout the state, and the creation of four-year institutions in Flint and Bay City/Saginaw/Midland. These recommendations have been implemented to a significant degree.

The Citizens Committee saw an expanded role for the State Board of Education, acting as the coordinating agency for higher education throughout the state. Thus, an increase in funding levels was proposed to further this broadened scope of the State Board. The Committee also recommended the creation of two new institutions, one for research in teaching, and one to promote research and development beneficial to the state. These boards were not established nor did the State Board of Education assume the planning and coordinating role envisioned by the Committee.

The State Board of Education's State Plan (State Plan for Higher Education, 1970) was created at a time when coordination of higher education was a concern throughout the United States. This plan was based on the premise that the State Board of Education would serve as the coordinating agency for higher education in the state. The report contains information on enrollments, degrees conferred and expenditures; and proposes that the State Board engage in postsecondary education planning intensively, developing a system for statewide data collection, approving establishment of new institutions and programs, making recommendations about program discontinuance, reviewing budget proposals, and coordinating state and federal programs granting aid to postsecondary institutions and students. The State Board has not, at this time, taken on this broad planning role for the State of Michigan.

The Siedman Report (Building for the Future of Postsecondary Education in Michigan, 1974)* was written at the beginning of the national period of contraction for postsecondary education. The Commission concluded that strictly voluntary mechanisms of coordination were not effective and proposed an amendment to the Constitution to create a separate board of postsecondary education for the state. This board would have the power to advise and make recommendations to the Governor and Legislature and assume the functions related to postsecondary education now performed by the State Board of Education. The Constitutional Amendment necessary to implement this recommendation was not pursued.

The Agee Report (Report of the Higher Education Capital Investment Advisory Committee, 1980)* focused on capital outlay expenditures and improvements in the planning process. Based on projected enrollments, the report did not recommend expansion of the physical plant, but rather that repair and maintenance become funding priorities. The report recommended that a state screening committee be created to screen capital outlay requests as well as the creation of a strategic plan and uniform evaluation criteria for requests. Each institution was urged to use a more systemized planning process. This statewide moratorium on construction and centralization of the planning process has not occurred to date.

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*Received by Commission members "in full."

In sum, the commission reports reflect the dynamics of higher education in Michigan: an expansion and rationalization of the system parallel to vast increases in enrollment; a stress on coordination, reflecting national interest in such issues; and a push to systematic management of declining resources in the late Seventies.

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Appendix A

Russell, John Dale, The Final Report of the Survey of Higher Education in Michigan, Lansing: Michigan Legislative Study Committee on Higher Education, 1958.

Summary of Recommendations

For convenience, the recommendations that are made throughout the preceding chapters of this report are recapitulated in this final chapter. Each recommendation is stated briefly and no attempt is made to supply a full explanation of the reasons for it or the supporting evidence. At the end of each of the recommendations a page reference indicates the place in the text of the report where the recommendation appears and where the supporting materials will be found. The reader who is interested in a particular recommendation is advised to refer to the treatment of the subject in the text, and in the earlier publications of the Survey, so as to get the full context out of which the recommendation has grown. The listing is in the order of the appearance of the recommendations in the text of the earlier chapters of this report.

1. It is recommended that the Legislature provide Ferris Institute sufficient support so that the Institute may receive institutional accreditation by the North Central Association of Colleges and Secondary Schools, together with accreditation by appropriate agencies in those technical and professional fields in which such recognition is now lacking.

2. It is recommended that the programs of the community colleges that have not yet been accredited by the North Central Association of Colleges and Secondary Schools be strengthened so as to meet fully the standards for such accreditation.

3. It is recommended that the State Department of Public Instruction, in collaboration with the Michigan Association of Collegiate Registrars, the Michigan College Presidents Association, and other interested groups, take steps to work out a completely uniform pattern of reporting enrollment statistics, that can be followed by each institution of higher education in the State in all reports of enrollment.

4. It is recommended that Wayne State University College of Medicine be granted additional operating expenses, with the understanding that its freshman class can then be increased from 75 to 125 students by the fall of 1958. (This recommendation of Staff Study No. 3 was in process of being carried out at the time of the preparation of this final Survey report.)

5. It is recommended that the State undertake, probably not earlier than 1963 nor later than 1966, a comprehensive study of its need for medical practitioners and their distribution, to develop suitable plans for medical education to meet these needs as they appear at that time.

6. It is recommended that:
   a. The university schools of nursing be developed in size and with more graduate work; this recommendation has special reference perhaps to the University of Michigan, which seems to have much unrealized potential, with many factors favorable to expansion.
   b. Substantial scholarship and loan funds be provided from philanthropic sources for the university schools of nursing.

7. It is recommended that Michigan attempt to find a part of its answer to the nurse shortage by supplying ample resources for enlarging and cautiously increasing the number of two-year schools in the State.

8. The following recommendations are made regarding extension services in the State-controlled institutions of Michigan:

   a. It is recommended that the institutions have in view as an ultimate objective a single, State-wide extension system, pooling the resources of all the institutions and applying these resources as wisdom and economy indicate that they should be applied.
   b. It is recommended that, in order to give better service to the people of Michigan, a judicious but substantial enlargement of joint offerings in extension services be seriously and studiously undertaken.
   c. It is recommended that there be a greater measure of self-imposed limitations on extension services by the various institutions, extending to a refusal to operate activities that could be made available or ought to be made available through the services of such local educational institutions as the high school, the community college, or other nearby State-controlled institutions, or perhaps private institutions, unless the local or neighboring institution is unwilling to undertake the services.
   d. It is recommended that a serious analysis be undertaken of the total educational needs of the State for extension and adult education, and that a reasonable determination be made of the proportion of public funds which should be made available for such purposes, with the idea that subsidies for adult education and extension activities need to be enlarged sufficiently so as to remove from such activities the burden of almost complete self-support.
   e. It is recommended that there be a cooperative examination and analysis of the available curriculums and programs in extension and adult education on the part of all the State-controlled institutions in order to determine whether or not the offerings are responsive to actual needs, in order to confine the offerings and activities of each of the State-controlled institutions to fields in which the institutional resources are adequate, and in order to insure that the instructional quality of such offerings and activities will be maintained at a level consistent with collegiate or university performance and standards.

9. It is recommended that the Michigan institutions of higher education be provided with sufficient operating funds to enable them to make marked improvements in faculty salaries, to the end that scholars of the highest levels of competence may continue to be attracted and retained on the teaching staffs of the colleges and universities in the State.

10. It is recommended that the listings of plant needs for the various State-controlled institutions, as shown in Staff Study No. 4, be considered by the Legislature, as capital outlay requests for new building projects are presented to it in the future.

11. It is recommended that appropriations to the State educational institutions be continued at a level that will permit the maintaining of high quality programs, that will gradually improve the quality of the programs in all the institutions, and that will rapidly improve the quality of those institutions that are now below the State average in support.

12. It is recommended that immediate efforts be made to set up a uniform system of financial accounting and reporting in all the State-controlled institutions of higher education in Michigan, with categories, classifications, and definitions in conformity with standard practice, to the end that the State fiscal authorities, the Legislature, and the institutional officials may have truly comparable financial information as a basis for determining the needs for support and the effectiveness with which supporting funds are being used in the institutions under State control.

13. It is recommended that the Legislature regularize the use of general, unrestricted institutional funds for scholarship purposes, especially that part of such funds which may be derived from unrestricted appropriations.

The Legislature might well also develop a plan of equalizing the amount that may be used from this source for scholarship purposes in the various institutions.

14. It is recommended that the community colleges in Michigan develop a better balance in their instructional programs, so that the offerings in pre-professional fields and in the lower-division courses in arts and sciences are supplemented by a varied range of offerings in organized occupational fields.

15. It is recommended that the community colleges in Michigan that are not now accredited by the North Central Association of Colleges and Secondary Schools strengthen their programs and facilities so that they may qualify for membership in the regional accrediting agency, and also so that they may receive recognition and acceptance from appropriate national agencies that accredit programs for the preparation of technicians and semi-professional personnel.

16. It is recommended that the community colleges keep up their efforts to maintain a supply of technicians and semi-professional personnel for the economy of the State.

17. It is recommended that professional, educational, and lay leadership in Michigan make some effort to formulate a policy regarding the relative roles of the several post-high-school institutions, and to promote a sequential and coordinated system of higher education.

18. It is recommended that steps be taken toward the establishment in Michigan of a number of additional community colleges in locations that offer a good potential for the development of an institution of satisfactory size.

19. It is recommended that, in each locality of the State that seems to offer the possibility for developing a community college of satisfactory size, a thorough study of the area be made before decision is reached about organizing a new institution there.

20. It is recommended that the community college laws in Michigan be extended to allow the formation of community college districts encompassing two or more adjoining school districts.

21. It is recommended that the present specific stipulation of 10,000 population, now found in the community college law, be abolished.

22. It is recommended that a minimum foundation program for the support of community college programs in Michigan be formulated.

23. It is recommended that the State contribute to the support of the community colleges an amount equal to one-half the minimum foundation program.

24. It is recommended that the State continue to assist the community colleges in financing capital outlay projects, to the extent of 50 per cent of the total cost of approved projects.

25. It is recommended that the capital outlay assistance from State funds be permitted to apply to costs of site acquisition and improvement and such facilities as parking areas and student centers, but not to dormitories or residence halls.

26. It is recommended that further consideration be given to the introduction of a State-wide plan by which any district not maintaining a community college would be responsible for contributing to the support of each community college in which any of its residents are enrolled anywhere in the State.

27. It is recommended that in those situations in Michigan where the needs of the population are such that two or more types of post-high-school educational institutions are necessary, the State adopt the policy that is now being followed in California. This policy puts the community college as the first type of post-high-school institution that should be developed and supported. On later study and continued evidence of need for additional types of higher institutions, these also are authorized.

28. It is recommended that, if and when a convention is called for a general revision of the State Constitution, consideration be given to revising the method of selecting board members for the State-controlled institutions, so that all will be appointed by the Governor by and with the advice and consent of the Senate.

29. It is recommended that, if and when a convention is called for a general revision of the State Constitution, consideration be given to the elimination of ex officio membership by the State Superintendent of Public Instruction on any Board that controls a State college or university. (See Chap

30. It is recommended that, if and when a convention is called for a general revision of the State Constitution, consideration be given to the elimination of all provisions for ex officio, non-voting members of the controlling boards of the State institutions of higher education.

31. It is recommended that the statute providing for the Board of Control of Michigan College of Mining and Technology (C.L. 390.352)

be amended by striking out the clause requiring four of the members to be residents of the Upper Peninsula. (See Chapter V, pag

32. It is recommended that, if and when a convention is called for a general revision of the State Constitution, consideration be given to the elimination of the provisions that the Presidents of the University of Michigan and Michigan State University shall be the presiding officers of their respective governing boards. (See Chapt \

33. It is recommended that the statute governing Wayne State University be amended to provide that the Chairman of the Board of Governors shall be elected from the membership of the Board and shall preside at Board meetings.

34. It is recommended that steps be taken at once to create a separate board for the control of each of the four institutions now under the State Board of Education—Central Michigan College, Eastern Michigan College, Northern Michigan College, and Western Michigan University. (See Chap-

35. It is recommended that, if and when a convention is called for a general revision of the State Constitution, each board for a State-controlled institution of higher education be given the same kind of constitutional authority and responsibility for management and control of their respective institutions as the Constitution now extends to the boards for the University of Michigan and Michigan State University. There should be no change in the constitutional status of the boards for the University of Michigan and Michigan State University.

36. It is recommended that the Legislature take immediate steps to create and establish a board for the coordination of the State-controlled program of higher education in Michigan.

37. It is recommended that the Legislature provide for the creation of a Community College Board to exercise the necessary State-level supervision over the community college program in Michigan. (See Chapter V, page 119.)

38. It is recommended that the agency, to which central State authority over the community college system is assigned, prepare an annual budget request for appropriations for the current support and capital outlay needs of the entire system of community colleges; and that this budget request be submitted to and be reviewed by the proposed Coordinating Board, in the same manner as the budget requests for appropriations for each of the State-controlled, degree-granting institutions are reviewed; and that the Coordinating Board be responsible for recommending to the State fiscal authorities and to the Legislature the total amount to be appropriated from State funds for current support and capital outlay projects in the community college system.

39. It is recommended that the Legislature transfer the function of the supervision and accrediting of high schools in Michigan to the State Board of Education and the State Department of Public Instruction, with a corresponding transfer of the funds needed to operate this service.

40. It is recommended that the present privately controlled institutions of higher education in Michigan make every effort to continue their operation on a satisfactory basis without considering the possibility of a change to public control, and that no steps be taken by public authorities to encourage any institution operated at present under private control to seek to become publicly controlled.

41. It is recommended that it *not* be the policy of the State of Michigan to make further necessary extensions of the facilities for publicly controlled higher education through the establishment of branches of the State-controlled colleges and universities.

42. It is recommended that, as rapidly as is feasible, each of the existing branches of the State-controlled institutions in Michigan be set up as an autonomous State institution, with its own board of control and administrative staff. It is recognized that considerable time will be required to carry out this recommendaion, and that the solution reached may be different in various locations.

43. It is recommended that the Legislature authorize the creation of a commission to consider the establishment of an additional State college or colleges, with an appropriation so that this commission can make a thorough study of the situation and prepare a report that will guide the proposed State Coordinating Commission and the Legislature in taking the necessary steps to insure the best possible institutional development for services to higher education in Michigan

44. It is recommended that no additional barriers be imposed by the Legislature of Michigan against the attendance of students from other states in the publicly controlled institutions of higher education.

45. It is recommended that the policy of the State be to provide sufficient financial support to its institutions of higher education so that they are able to furnish education of good quality at the lowest possible cost to the student for tuition fees.

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Appendix B

REPORT OF CITIZENS COMMITTEE ON HIGHER EDUCATION

March 1965

Recommendations Drawn From The Summary Report

I. Expansion of Postsecondary Education

The Citizens Committee is convinced that the burgeoning demands for higher education compel us, the people of Michigan, to take a candid look at our present institutions of higher education, observe their inadequacies, and then pledge such extraordinary commitment of moral and financial effort and energy as necessary to meet today's and tomorrow's educational needs.

An essential to meeting the overall challenge will be a statewide blueprint for a coordinated, cooperative plan of higher education, one which will avoid unnecessary duplication and assure maximum educational achievement in terms of dollar expenditure. The newly established State Board of Education is, of course, the body to draw up such a statewide plan.

II. Importance of Community Colleges

The Citizens Committee welcomes the increased enrollment in the community and junior colleges. All educable people should be provided with the opportunity to take such training as they are able to take, and they should be inspired to do so. The Committee believes that the modern comprehensive community college, as distinct from its predecessor, the strictly liberal arts oriented junior college, is the most suitable educational facility yet devised for providing this indispensable service.

III. Expansion of Four-Year Institutions

Additional state-supported institutions or campuses should be established only in those areas where it can be demonstrated to the satisfaction of the State Board of Education that they are necessary to meet the educational needs of the areas and that they will lessen the load on the existing institutions. In terms of population, resources, and educational aspirations, two areas of the state not now having four-year, state-supported institutions of higher education are ready for them. They are the Flint area and the Bay City-Saginaw-Midland area.

The Citizens Committee recommends that the principle of individual self-government of institutions be adhered to in locating and establishing new institutions and campuses. The Committee further recommends that an effort be made to work out ways and means whereby an existing branch could be brought under its own autonomous government, if and when such should be desired by the area in which the branch is located and deemed advisable by the State Board of Education.

The Committee believes that coordination of higher education requires that the State Board of Education shall have the right of approval over the spread of institutions throughout the state, of whatever type: four-year

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institutions, community colleges, graduate institutions, or branches of existing institutions.

IV. Privately Supported Colleges and Universities

The Citizens Committee believes that Michigan's program of higher education would be enhanced and enriched by an enlargement and strengthening of the entire educational program of the private colleges and universities. It urges, therefore, that the State Board of Education, the state administration, the legislature, and all interested groups and individuals in the state be on the alert for what can be done to strengthen and enlarge the entire private college program.

V. Community Colleges

The Committee believes that a statewide system of community colleges, primarily as commuter institutions, offering the technical-vocational and terminal-cultural programs as well as the freshman and sophomore academic programs, and geared to the needs of the communities and the state as a whole, is an essential part of the Michigan system of higher education, and that the development of such a system should be given high priority by the State Board of Education and the legislature. Each community college should have its own district and its own governing board entirely separate from the K-12 school district and its governing board.

The Committee cautions that in establishing new four-year institutions in the state, extreme care be taken to do nothing, locally or statewide, that will undermine the community college program.

VI. Extension and Adult Education

The Committee recognizes the excellent work being done by the Michigan Coordinating Council of State College Field Services in coordinating the field services being offered, and it recommends that these coordinating functions be strengthened and extended.

The Committee is informed that informal adult educational services and, most particularly, the program of the Corporate Extension Service are not included within the present pattern of extension cooperation.

The Committee recommends all of these informal cooperative extension services be combined with the General Extension Division and be brought under the coordination responsibilities of the Michigan Coordinating Council of State College Field Services.

VII. Coordination of Programs

The Committee believes that the State Board of Education must take immediate and firm control of the matter of coordinating graduate and graduate-professional programs in view of encouraging them to develop where they can best and most economically be offered and discouraging them from developing where they cannot best and most economically be offered.

The Committee suggests that the State Board of Education might benefit from the help of a continuing advisory commission, board, or committee, comprised of representatives of state government, the universities, the industries, and citizens, whose duties would be to formulate plans and means for stimulating the growth of research and development activities in the state, and at the same time to advise the State Board of Education as to ways and means for coordinating research and development carried on by the institutions, the federal and state governments, and industry.

Any institution in the state should be permitted to offer any educational program provided the State Board of Education is satisfied that (1) there is a social need for it, (2) there is a valid unsatisfied student demand for it, and (3) the institution is well qualified in scholarly tradition, staff, facilities, and location to offer it effectively, efficiently, and economically. As a corollary to the foregoing principle, any institution desirous of offering a program for which it believes it has special qualifications should be both encouraged and obliged to apply to the State Board of Education for approval.

VIII. Faculty Support, Instruction and Admissions

The Committee recommends that the now autonomous boards of the state-supported institutions take the necessary steps to reorganize their budgets in view of working toward competitive faculty salary scales when such do not now exist.

It is recommended that the four-year institutions continue to adjust the admission of students to the educational programs offered to the point where unnecessary attrition, which is costly to society and damaging to the individual, may be avoided.

It is recommended that counseling at the time of admissions and after admissions be greatly stepped up so that students may find their way into the right institution in the first place and into the right programs after being admitted to an institution.

It is recommended that experiments in the use of new teaching techniques and ways or promoting student self-teaching, self-learning, and teaching of each other, already under way, be greatly encouraged and speeded up.

Where institutions are located near each other, joint programs may be conducted to advantage. It is recommended that college and university administrations be constantly on the alert to undertake such reorganizations as will enhance the productivity of faculty and the effectiveness of student learning.

It is recommended that graduate student teaching be recognized as a permanent part of the system, and that the graduate schools take every precaution to make sure that they are organized to make good teachers of these students.

The Committee believes that there are in many communities, a substantial number of people who would like to enter or re-enter teaching if it were possible for them to complete degree requirements or to refresh and update essential course work already taken. The Committee recommends, therefore, that those universities offering continuing education programs place special emphasis on such off-campus programs as will meet the needs of these potential teachers.

There is particular need for inservice programs to help new teachers adjust their course material to the community college level and to acquire effective teaching methods. It is recommended, therefore, that the community colleges give special consideration to providing inservice assistance to new teachers.

It is recommended that the Board, through its higher education staff and its advisory community college board, carry on constant study of the needs for faculty, the sources of faculty, salary scales, retirement policies, and other pertinent matters in view of being helpful to the institutions and being well-informed when advising the legislature concerning budgets.

The Committee believes that there is needed a Center for the Improvement of Learning and Teaching (1) to stimulate and initiate research by the individual institutions and their schools of education in education processes and their resultant effect on students; and (2) to serve as a clearing-house and advisory service in regard to the substance of the curriculum, methods of instruction, and the materials and facilities for instruction.

IX. Financial Support of Institutions

The Committee believes that, in the future, the state will need to provide a larger amount for community college operating costs than it is now providing. A formula for determining state support of community college operating costs embodying these equalizing factors between districts and between programs, should be worked out and adopted. As an essential step in adopting a formula for state support of community colleges, a uniform system of accounting and reporting should be developed as rapidly as possible.

The Committee believes that a local community college district should continue to be free to tax itself either to provide a better program or to reduce the cost to its students, or both, without suffering a loss of state support.

The Committee recommends that, where federal funds are not involved, the state and the local community college districts share equally in the total cost of the capital projects; and that, where federal funds are involved, the state and the local districts share equally the balance of the cost of the capital projects over and above that covered by federal funds.

The Committee recommends that the institutions make a special effort to complete their initial study of accounting terms and come to an agreement on definitions of them by June 30, 1965.

The Committee recommends (1) that budget requests be presented to the state earlier than has been the practice, and ways be explored by which the legislature could take earlier action on the requests; and (2) that the State Board of Education explore the advantages and feasibility of supporting the requests for appropriations for a fiscal year with two-year budget projections.

Most of the administrators of Michigan's universities and colleges have expressed the view that the use of a formula, establishing a reasonable sharing of educational costs by fees from students and by legislative appropriations, is worthy of careful consideration. The Committee recommends that the State Board of Education, in consultation with the institutions, endeavor to construct such a formula.

The Committee believes that any qualified and deserving high school graduate in Michigan should be encouraged and assisted in the pursuit of higher education to the limit of his talents and abilities, and that personal financial circumstances alone should not be permitted to intervene. To this end, Michigan has recently launched both a state loan program and a state competitive scholarship program, administered by the Michigan Higher Education Assistance Authority. Two programs, in the view of the Committee, should be administered jointly and with due regard to the individual student's need and his recourse to other sources of revenue.

The Committee recommends that a center be established where all information concerning available scholarship and loan funds--state, federal, and private--and awards made to applicants may be assembled for the benefit of both those making the scholarship and loan awards and those applying for them.

The Committee recommends that all applications to offer new programs filed by institutions with the State Board of Education contain an account of the facilities required by the program immediately and in the foreseeable future. Furthermore, the Committee recommends that all requests for capital appropriations be accompanied by a statement of justification.

The Committee strongly recommends that immediate consideration be given to long-term financing arrangements that will enable the state to finance without undue delay such capital improvements as are in accord with the state plan for higher education and have approval under the plan.

The Committee strongly urges that the state administration and the legislature take special care that sufficient funds are provided the Department of Education for the efficient and effective operation of the Department and the Board of Education.

POSTSECONDARY ENROLLMENTS, UNITED STATES AND MICHIGAN SUMMARY OF HISTORICAL DATA AND PROJECTIONS

STATE OF MICHIGAN

JAMES J. BLANCHARD, Governor
COMMISSION ON THE FUTURE OF HIGHER EDUCATION
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POSTSECONDARY ENROLLMENTS
UNITED STATES AND MICHIGAN

SUMMARY OF HISTORICAL DATA AND PROJECTIONS

Prepared For

GOVERNOR'S COMMISSION ON THE FUTURE OF HIGHER EDUCATION

November 1983

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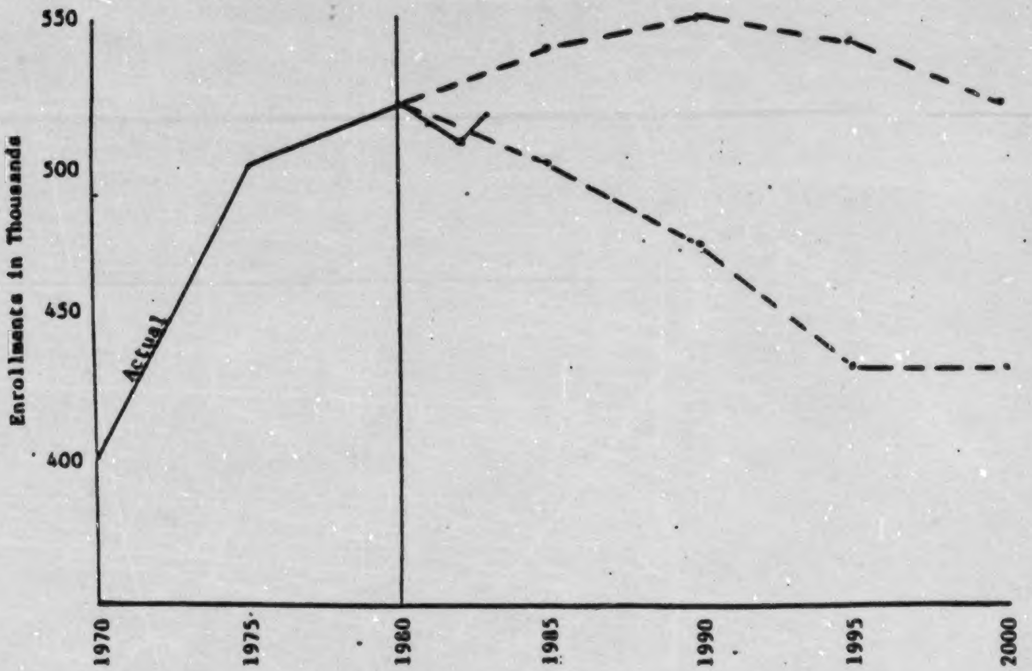
I. SUMMARY

In Michigan, higher education fall headcount enrollments increased 125,000 (32%) from 1970 to 1983. Nearly 75% of this increase, 92,000, occurred in public community colleges. The predominant range of available enrollment projections for the year 2000 varies from an upper level projection that places enrollments at about current levels of 520,000 students, to the lower part of the range which predicts a 16% decline to 435,000 students.

The following graph presents historic enrollments and the predominant range of projected enrollments for the 1970-2000 period.

MICHIGAN HEADCOUNT ENROLLMENTS
Actual 1970-1980
Projected 1980-2000



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National enrollment trends are generally similar to Michigan's experience and projections of future national enrollments suggest declines similar to those projected for Michigan. Nationally, enrollments increased 44% from 1970 to 1982 with most of the increase occurring in public community colleges. Projections for the year 1997 range from the current enrollment levels to a reduction of 15%.

It should be stressed that future public policies will affect future enrollment levels. Policies such as generous financial aid programs and low tuitions will, obviously, tend to increase enrollments; policies which make higher education less accessible will result in lower enrollment levels.

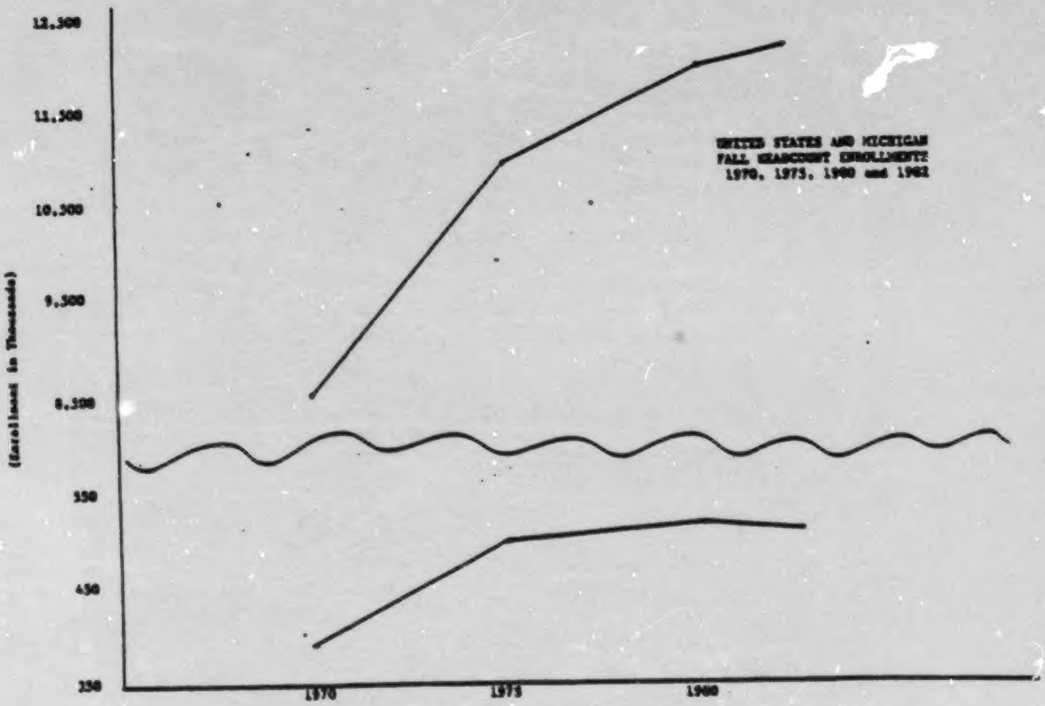
Sections II and III of this paper include a detailed discussion of historic and projected enrollment levels for both Michigan and the United States.

II. HISTORICAL ENROLLMENT INFORMATION

The following provides information on headcount (individuals) and equated (credit hour) enrollments.

A. Overall Fall Headcount Enrollments

At both the national and state levels, headcount enrollments grew substantially from 1970 to 1975, followed by a much slower rate of growth from 1975 to 1982. The period from 1975 to 1982 included some years of actual decline.



UNITED STATES AND MICHIGAN
FALL HEADCOUNT ENROLLMENTS
1970, 1975, 1980 and 1982

B. Overall Equated Enrollments

1. United States

Although inconsistent application of the definition of "equated" students at national level hampers analysis, generally:

a. Equated enrollments appear to constitute 70-80% of headcount, and

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44.

b. Equated enrollments as a percent of headcount are declining, suggesting that the average student may be taking fewer credit hours.

UNITED STATES
Fall Headcount Enrollments by Attendance Status 1970-82

(Numbers in Thousands)

Year	Fall Headcount	Equated	Equated as Percent of Headcount
1970	8,581	6,737	78.0%
1975	11,185	8,481	76.0%
1980	12,097	8,749	72.0%
1982	12,358	N/A	N/A

2. **Michigan**

The definition of fiscal year equated students (FYES) has remained consistent over a period of years, thereby enabling the following comparisons:

a. FYES generally constitute about three-quarters of headcount;

b. In recent years, FYES enrollments as a percent of headcount have risen slightly (from 72% to 74%) suggesting that the average student may be taking more credit hours.

MICHIGAN

Fall Headcount and FYES Enrollments
1979-80 through 1981-82

(Enrollments in thousands)

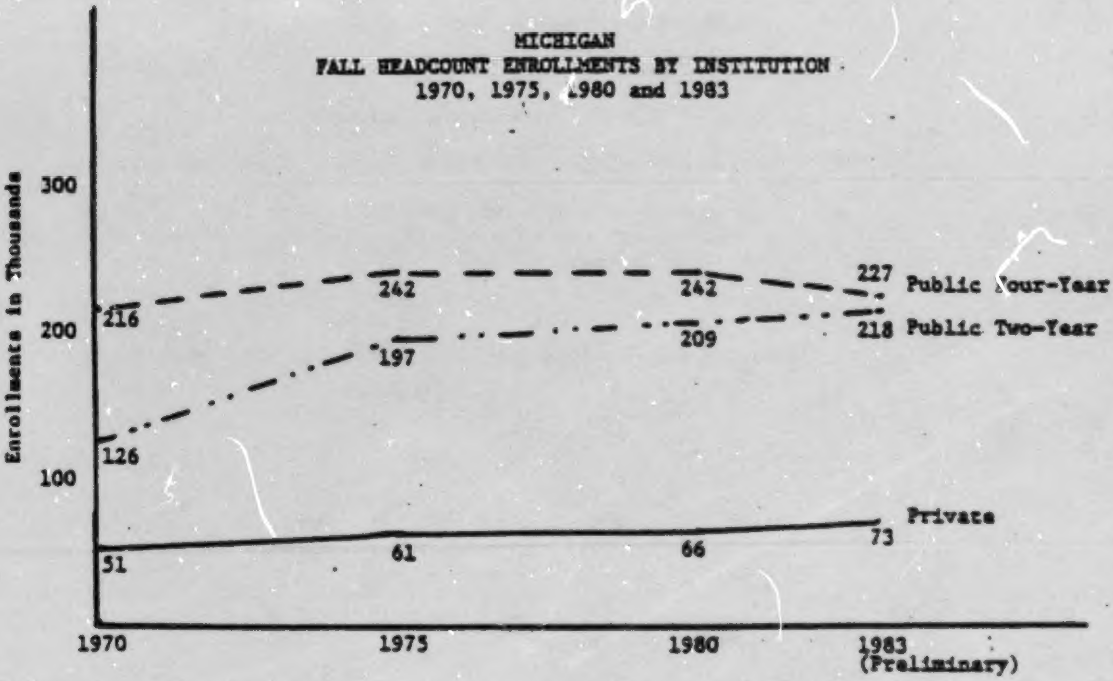
	Headcount	Fiscal Year Equated	Equated as a Percent of Headcount
1979-80	514	371	72.2
1980-81	518	385	74.2
1981-82	514	380	74.0

C. Enrollments by Type of Institution

1. Fall headcount at both the national and state levels show:

a. Fall headcount in all institutions grew considerably from 1970 to 1980.

b. Over the same period, the proportion of enrollments in public two-year institutions grew considerably. The major shift was from public four-year institutions; private institutions were affected to a lesser degree.



2. Equated

The ratio of headcount students to fiscal year equated students (FYES) varies considerably by type of institution. As the following table shows, in 1981, community colleges enrolled 1.7 students to generate 1.0 FYES while public four-year institutions enrolled 1.2 students to generate one FYES. This suggests that community college students enroll for fewer credit hours.

MICHIGAN 1981 HEADCOUNT STUDENTS PER FYES

Public Two-year	1.71
Private	1.24
Public Four-year	1.16

D. Fall Headcount Enrollments by Age

1. United States

Data on enrollments at the national level show that there has been a significant increase from 1970 to 1980 in enrollments of:

a. "Traditional" students (age 18-24):

From 5.926 million to 7.311 million, a 23.4% increase; and

b. "Nontraditional" students (age 25 and over):

From 2.386 million to 4.538 million, a 90.2% increase.

c. The most rapid growth was from 1970 to 1975, followed by slower growth from 1975 to 1980. There were considerable variations by sex.

2. Michigan

Information on enrollments by age is not compiled in Michigan.

E. Total Headcount Enrollments by Sex

1. United States

a. Males: Enrollment of males increased from 5.044 million in 1970 to 5.874 million in 1980, an overall increase of 16.5%. Enrollment patterns varied by age, however.

b. Females: Female enrollments increased dramatically and consistently from 3.537 million in 1970 to 6.223 million in 1980 (an increase of 75.9%).

c. For both males and females, the period of greatest growth was from 1970 to 1975, followed by slower growth from 1975 to 1980.

2. Michigan

Adequate age specific data are not compiled at the state level to allow comparisons of participation by sex and age. Overall enrollment information by sex is as follows:

a. Males: Male enrollments increased from 234,000 in 1970 to 273,000 in 1975 (+16.6%), then declined to 245,000 in 1982.

b. Female enrollments at the state level grew from 159,000 in 1970 to 227,000 in 1975 (+42.8%), reaching 264,000 in 1982 (a change of +16.3% over 1975).

III. POSTSECONDARY ENROLLMENT PROJECTIONS

A. General Context for Reviewing Projections

1. Enrollment levels are the result of:

   a. Demographics, the pool of available students; and

   b. Participation rates, the rate at which available students attend. Participation rates are influenced by public policies. Thus, to some extent, policy makers can influence future enrollment levels. Recommendations by the Commission could help to offset a projected decline in the 18- to 24-year-old population and could increase participation by "older" students, minorities and handicappers.

B. Projections for the United States

1. Overall fall headcount enrollments (U.S.)

   a. Projections are that headcount enrollments in the United States will:

      (1) Virtually equal 1980 levels in 1990 (12.1 million; National Center for Education Statistics). Predictions are for a decrease in private enrollments and an increase in public enrollments as shown below:

NATIONAL CENTER FOR EDUCATION STATISTICS PROJECTIONS

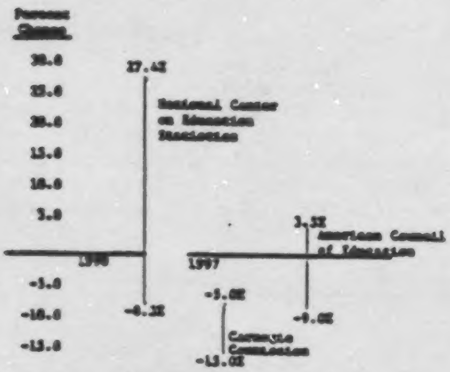
(Enrollments in Millions)

	1980	1990
Public	9.5	9.6
Private	2.6	2.5

      (2) Decline by 5 to 15% in 2000 (Carnegie Commission)

COMPARISON OF HEADCOUNT ENROLLMENT PROJECTIONS
Percent Change from 1980

United States



Attachments A, B, C and D provide greater detail for the projections by the National Center for Education Statistics.

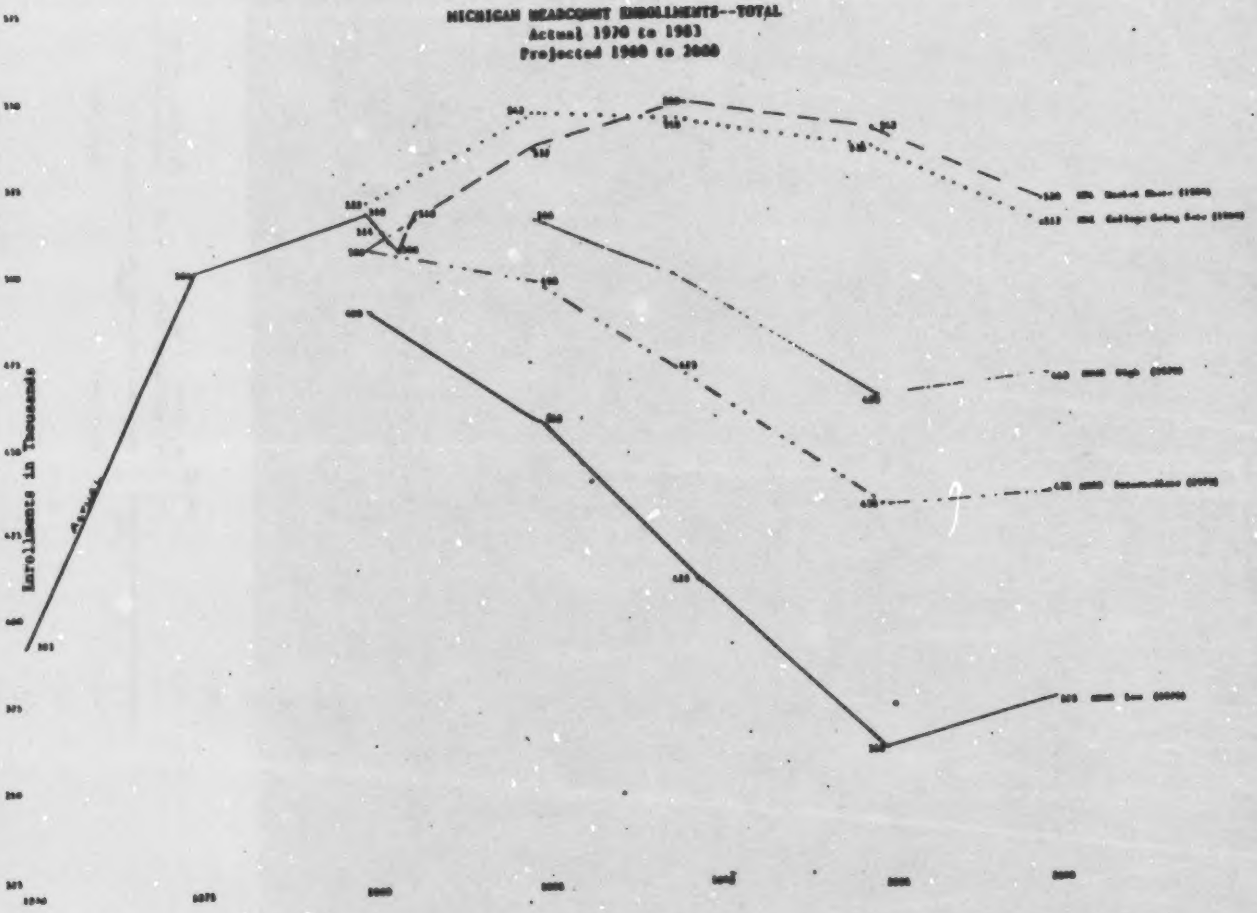
b. Work by Carol Francis for the American Council of Education indicates that public policy actions could increase future enrollment levels. She predicts enrollments in the year 2000 could be +3.5% to -9.0% of 1980 levels if specific public policies are implemented.

C. Projections for Michigan

Projections are for the years 1980 to 2000 and taken from reports produced by the Department of Education in 1980 and Dr. James Moor for the Council of State College Presidents in 1979.

1. Overall Michigan Fall Headcount

For the year 2000, the "predominant range" is from 520,000 (+.4%) to 435,000 (-16.0%), as compared to preliminary 1983 fall headcount of 518,000.

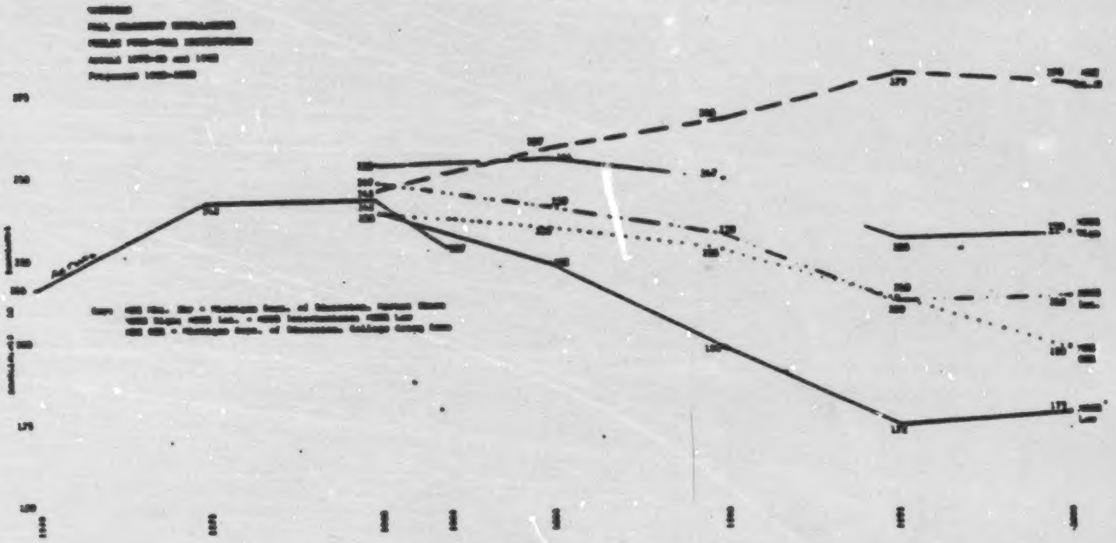


MICHIGAN HEADCOUNT ENROLLMENTS--TOTAL
Actual 1970 to 1983
Projected 1980 to 2000

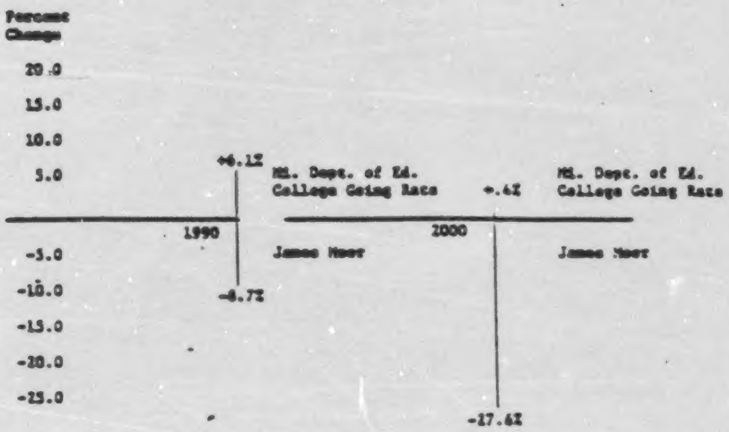
2. Michigan Headcount by Type of Institution

a. Public four-year

For 2000, the predominant range is 230,000 (+.9%) to 195,000 (-14.1%) as compared to preliminary fall headcount for 1983 of 227,000.



COMPARISON OF HEADCOUNT ENROLLMENTS: HIGHEST AND LOWEST PROJECTIONS
Percent Change from 1980
Michigan



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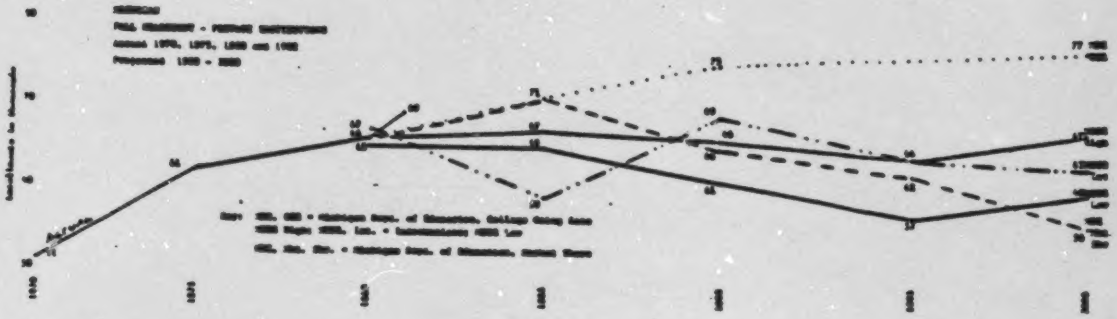
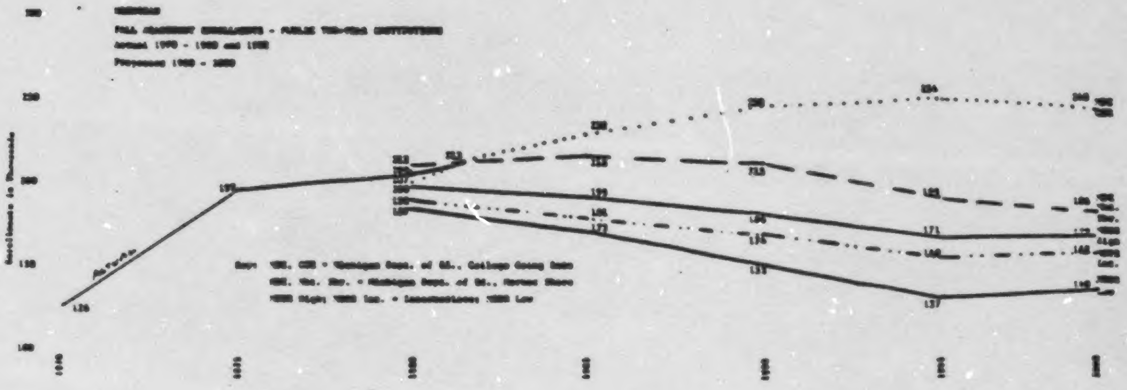
b. **Public two-year**

For 2000, the predominant range is 186,000 (-14.7%) to 140,000 (-25.6%) compared to 1983 preliminary fall headcount of 218,000.



c. **Private**

For 2000, the predominant range is 67,000 (-8.2%) to 60,000 (-17.8%) compared to 1983 prelininary fall headcount of 73,000.



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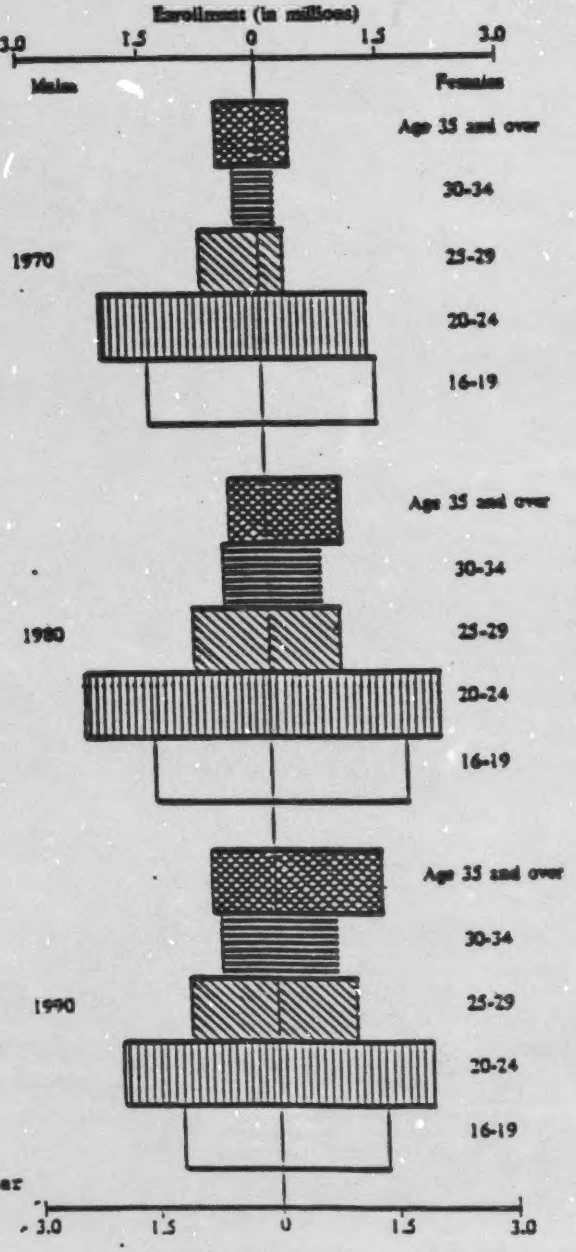
Attachment A

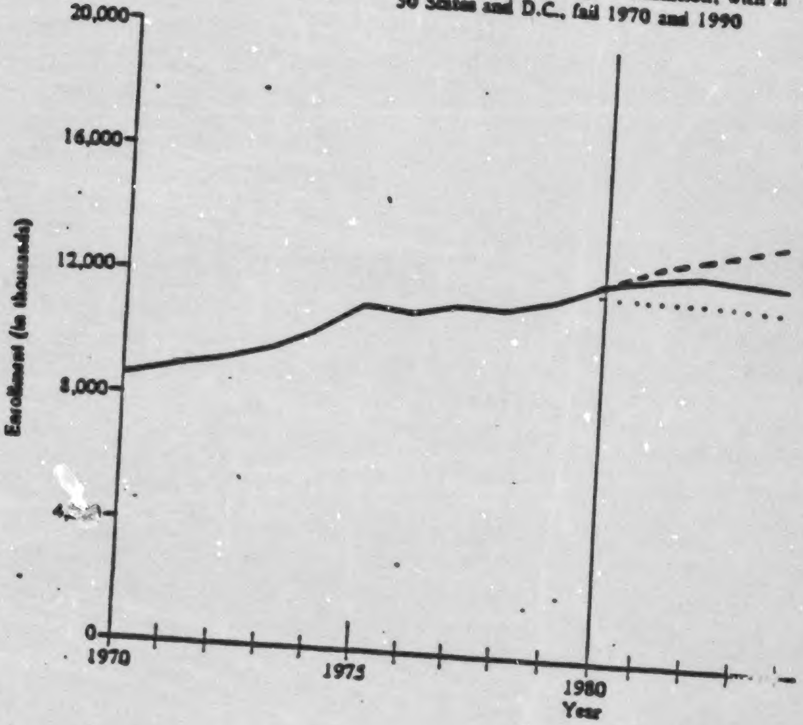
Figure 5.--Total enrollment in all institutions of higher education, by age and sex: 50 States and D.C., 1970, 1980 and 1990



Source: National Center
for Education
Statistics

Attachment B

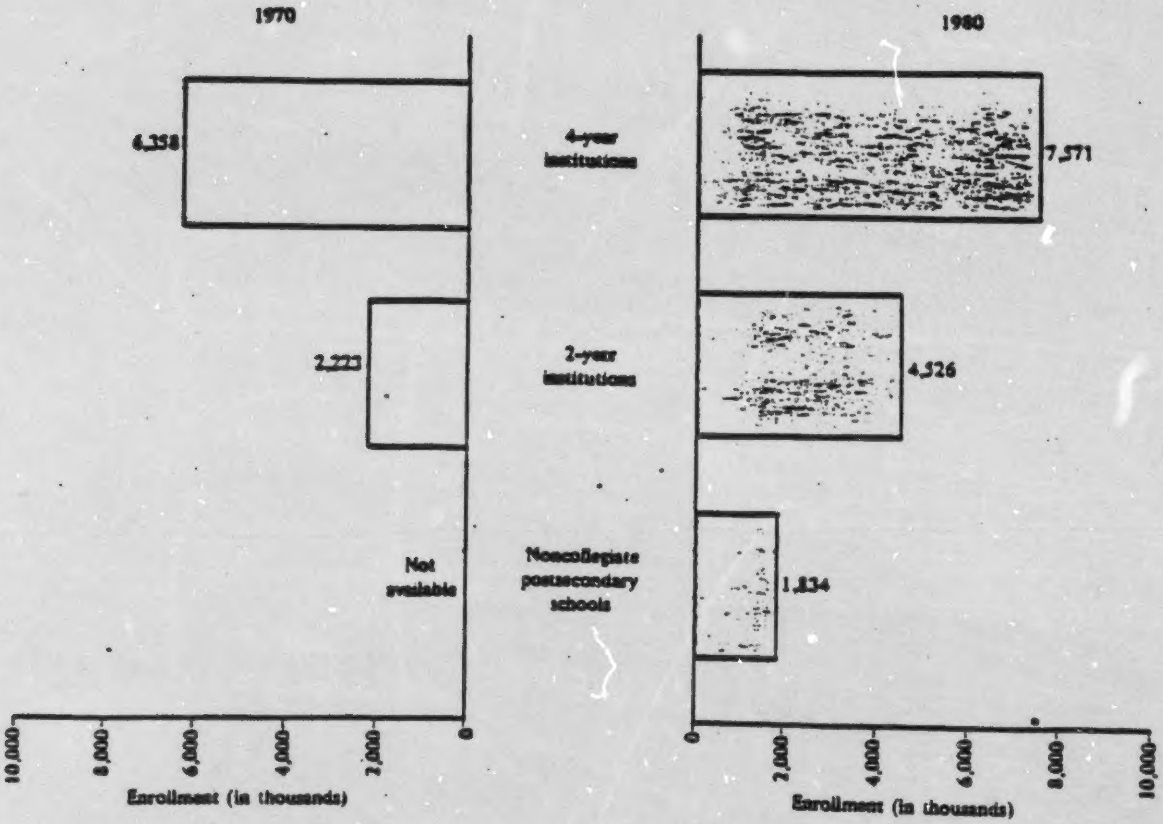
Figure 14.—Total enrollment in institutions of higher education, with al
50 States and D.C., fall 1970 and 1990



Source: National Center for Education Statistics

Attachment C

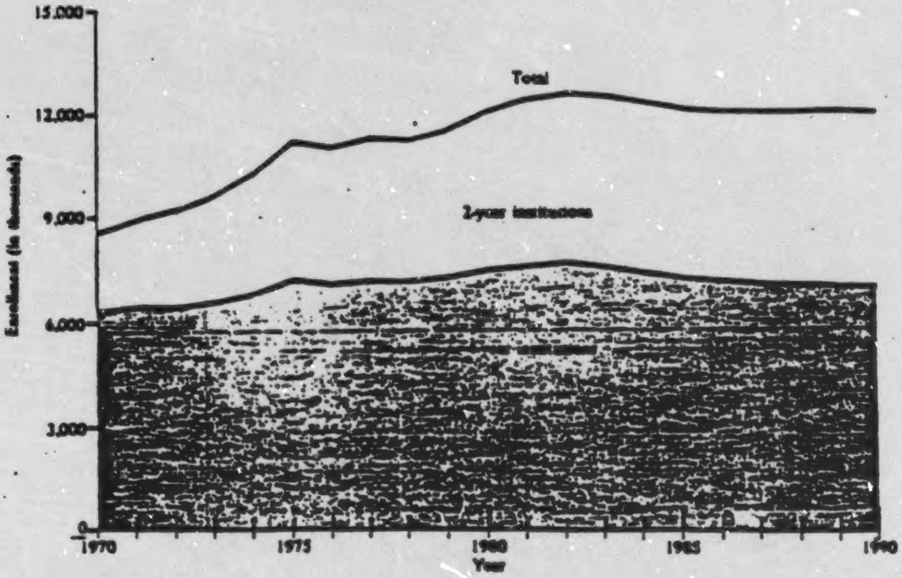
Figure 7.—Enrollment in institutions of higher education, by level: 50 States and D.C., 1970 and 1980



Source: National Center for Education Statistics

Attachment D

Figure 20.–Total enrollment in institutions of higher education, with intermediate alternative projections, by type of institutions: 50 States and D.C., fall 1970 to 1990



Source: National Center for Education Statistics

QUALITATIVE REFORM OF PUBLIC SCHOOLING

QUALITATIVE REFORM OF PUBLIC SCHOOLING — A DISCUSSION PAPER

Prepared for the Governor's Commission

on the Future of Higher Education

Nanette Lee Reynolds, Ed.D.
Office of the Governor

December, 1983

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QUALITATIVE REFORM OF PUBLIC SCHOOLING — A DISCUSSION PAPER

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B. Some National Reports to Come
C. "Your State Board of Education..." (Pamphlet)
D. Detroit Free Press Articles on Governor James J. Blanchard's Plans for Michigan Schools
E. "Per-Pupil Spending" (Chart)
F. "Sources of School Funds" (Chart)
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I. "Report on Educational Plans of Michigan High School Graduates, 1982 — Survey Highlights"
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QUALITATIVE REFORM OF PUBLIC SCHOOLING — A DISCUSSION PAPER

INTRODUCTION

Just as Michigan is characterized by an excellent system of higher education, so is our K-12 education system recognized both for its quality and its community support. Among the challenges facing Michigan is how to effect the strongest possible continuum for life long learning. To frame discussion about articulation between parts of the entire system of education in Michigan, this paper has been prepared for the Governor's Commission on the Future of Higher Education:

- to summarize the national reports on education reform in America;
- to define specific issues related to curricular reforms, teacher training reforms and quality teaching reforms;
- to pose questions about constructive actions which could be taken by Michigan's system of higher education in aiding the reform of schools.

NATIONAL REPORTS ON EDUCATION REFORM

Twenty-six years have passed since the launching of Sputnik I and the new education drive which was mounted to match, and later surpass, Russian supremacy in science and technology. Now in the context of the 1984 presidential campaign, Walter Mondale notes that

> Everytime throughout our history we have faced a national challenge that obstructed our future, we have turned to education to surmount that obstruction. . . Whether it was to compete with the Russians in the 1950's -- or to achieve social justice in the 1960's -- education has always been the best investment we can possibly make.

In the 1980's, America is in an age governed by technology, competition with foreign nations, and a need for workers who can adapt to rapid change in the labor market. Education for personal growth and self improvement, for citizenship, and for improved skills for employability is essential to address these challenges. An appropriate and enduring strategy is reform of, and innovation in, America's K-12 public school systems.

In 1980, the President's Commission for a National Agenda for the Eighties cited the consequences for this nation if our schools do not undergo a qualitative change. Growing concern about the quality of schooling in America has resulted in a wave of national reports, beginning in 1982 with The Paideia Proposal. Prepared by Mortimer J. Adler and the Paideia Group, a 22-member panel of educators, this philosophical report addresses the educational obligations of a democracy:

> The innermost meaning of social equality is: substantially the same quality of life for all. That calls for: the same quality of schooling for all.

The theme of this report, "overhauling" of American schooling, has continued throughout 1983.

Of all the previous studies on schooling, only the National Commission on Excellence in Education succeeded in spotlighting education through its report, A Nation at Risk. The report was released in April, 1983. The Commission was created in August, 1981 by Secretary of Education, Terrel H. Bell, and charged to "examine the quality of education in the United States." As described in a critique by Milton Goldberg and James Harvey, this report was

> intended to remind Americans of the importance of education as the foundation of United States leadership in change and technological invention and as the source of U.S. prosperity, security and civility.

The Commission emphasized that America is at risk due to a "rising tide of mediocrity" in our public schools. The report included documentation of the number of functionally illiterate American teenagers and adults, decline of Scholastic Aptitude Test (SAT) scores, decline in average achievement of high school students on standardized tests and low ranking in comparison to high school students from other industrialized nations. The descriptor used in the report — "rising tide of mediocrity" — has become the standard rhetoric of the 1984 presidential campaign.

States are now taking full advantage of this unprecedented time of media attention and public activity related to education. The Education Commission of the States begins its Summary of Major Reports on Education with this observation

> 1983 has been the Year of the Report on Education. Hardly a month has passed without the release of a major report by a prestigious group of citizens concerned about the state of American education.

At least thirty national sponsors and approximately two hundred state task forces have reports on education reform in process or published. The impetus, composition of the study panel, perspective, agenda, and data base vary from report to report. Yet all of the findings call for correction and improvement of America's school systems. The challenges are several:

- How to accomplish the goal of an improved national K-12 education system;
- What roles and responsibilities to assign members of the learning enterprise;
- How to acquire the resources appropriate and adequate to the tasks.

FOLLOWING ARE COMPOSITE HIGHLIGHTS OF THESE NATIONAL REPORTS:

- Schools should develop a strengthened core curriculum, expected of all high school graduates and associated with broad, yet specific and clear goals of schooling. While mastery of the English language is the number one priority of all students, recommendations also call for increased emphasis on mathematics, science and technology. There is an extensive discussion in the national reports about computers for use as an instructional tool or as a subject in and of itself. Recommendations are advanced to raise high school graduation requirements with little differentiation between requirements for college and non-college bound students.

- The national reports focus on services for all students, including such special populations as gifted and talented, handicapped, minority, bilingual and female students, as well as school drop-outs. There is consensus among the national reports, however, that reform of the entire education system will enhance schooling of all students, regardless of their unique needs.

- The reports offer several major recommendations about teachers and teaching. The first step toward more effective teaching should be incentives for prospective teachers to enter the profession and more effective teacher preparation to ensure quality performance in the classroom.

- Practicing teachers need ongoing opportunities for continuing education, and deserve other benefits such as professionally competitive compensation and improved working conditions, including freedom from extraneous duties which dilute teaching/learning time. The reports also emphasize the importance of equitable evaluation of teachers and administrators. It is proposed that through means such as these, effective teachers can be supported and retained in our public school systems.

- Implementation of recommendations stipulating a more efficient and productive use of the school day/week/year will also enhance the ability of teachers to teach.

- Several, but not all, of the reports assert that community, state and federal support must be summoned to provide resources for revamping America's system of public education. Likewise, recommendations call for raised expectations of the roles and responsibilities of families, educators, colleges and universities, business, industry and other leaders outside of education.

- Education is indeed a shared enterprise with all parties accountable for contributing to the education of today's youth. Although critical of public education in America, there is no consistent fault finding in the national reports. In fact, perhaps the highlight of these reports is the shared optimism that our nation is capable of recommiting its human, institutional and financial resources to ensuring healthy schools for a vital America.

(See Appendix A for summaries of major reports and Appendix B for a list of some reports to come.)

MICHIGAN'S HISTORIC EDUCATIONAL LEADERSHIP

To say that America's public schools are all in a state of ill health is both simplistic and unfair to the effective educators and successful graduates of our schools across the nation. A non-judgmental analysis, state by state, school district by school district, to assess areas of strength and weakness and define action strategies for school improvement seems a more appropriate response. In the face of "education under study,"[1] Michigan has taken this more positive approach.

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[1] A term taken from the title of a report by the Northeast Regional Exchange, Inc.

The national media has focused attention on reform efforts of several states whose governors and/or legislators have stepped "center stage" in calling for an overhauling of their respective K-12 systems. However, when compared to ongoing activities in Michigan, many of these initiatives have been underway in this state for years. Several factors have and will continue to frame efforts toward educational reform in Michigan. These include:

- A State Board of Education with the constitutional authority to provide leadership in overseeing all public education.
- A strong tradition of local autonomy and flexibility to serve the specific needs of the diverse Michigan population and its communities.
- The process of collective bargaining extended to teachers and other public employees.

(See Appendix C for pamphlet, "Your State Board of Education...").

Active progress toward education improvement and innovation in Michigan predates The Nation At Risk report by at least a decade. Through support of the executive and legislative branches of state government, the Michigan State Board of Education has launched programs and established trends which are recognized national models. In fact, Michigan educators are called into other states as consultants on these programs.

Among the most effective leadership initiatives of the State of Michigan are:

- Michigan Educational Assessment Program (MEAP). The primary statewide assessment of student performance is conducted through use of the Michigan Educational Assessment Program which tests fourth, seventh and tenth graders in fundamental skills of reading and mathematics. During 1983, basic skill achievement scores have continued to show a steady increase as measured by these tests.

- Mandatory Special Education. Separate funding is provided to school districts for the education of physically, mentally, or emotionally handicapped children. Specialized teachers and counselors, equipment and facilities are available to assist handicapped young people develop to their maximum potential. Initiated in September, 1973, Michigan's mandatory special education program is considered one of the best three in the country.

- Bilingual Education. Bilingual education is provided for a number of students of limited English speaking ability for up to three years or until the child becomes proficient enough in English language skills to receive equal education opportunity through the regular curriculum.

- State Compensatory Program for the Disadvantaged (Chapter 3). Special assistance is provided to K-9 students who need reinforcement in the basic skills, as diagnosed from their scores on the Michigan Educational Assessment Program (MEAP) tests.

- Vocational Education. Vocational education is a component of the education system located in high schools and area vocational centers which prepares individuals for entry into jobs or further advanced study and related training.

- Adult Education. Adult education promotes and provides exemplary instructional programs and services in order to meet the educational, occupational and self development needs of adults, primarily those who are not enrolled in conventional diploma or degree granting institutions.

- Professional Development. Professional development is funded through Section 97 of the State Aid Act and provides funds to local and intermediate school districts for local professional staff development. A policy board, consisting of a minimum of eleven members with a majority of teachers, determines how the staff development funds are used by the districts.

- Technical Assistance. To assist local school districts which face serious financial problems, the State Department of Education provides support targeted on school management and millage efforts and improvement of community participation.

- Project Outreach. Project Outreach is a project of the Michigan State Board of Education and is funded by the Michigan Legislature. Opinion polling activities, student leadership forums, community meetings and citizen volunteer programs are the major components of the statewide effort.

CURRENT MICHIGAN INITIATIVES

There are several forces in play to insure achievement of the ideal for public education in this state: a concern for equity, access and quality of the learning experience.

Initiatives of Michigan's Governor James J. Blanchard

During the first few months of his Administration and with bipartisan support from the Michigan Legislature, Governor James J. Blanchard was successful in reversing a three year trend of declining state support for public K-12 education.

- The 1983-84 increase in state aid to K-12 education is approximately $213 million;[2]
- During 1983-84, the state will spend a total of $1.4 billion on K-12 education, an increase of 16 percent over the 1982-83 funding level;[3]

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[2] This figure does not include the allocation to the teacher retirement fund, which amounts to approximately $400 million for 1983-84.

[3] Categoricals are available to any in formula and out of formula school districts which qualify. Examples of high cost programs are special education and vocational education; special need programs include compensatory education.

- Of the total state aid for 1983-84, 78 percent is appropriated for the school aid formula and 22 percent for specific categorical aid which is provided for high cost programs or to meet special needs in education.[4]

This increased support has taken the pressure off many districts to raise taxes, has prevented some districts from bankruptcy, and has brought additional school districts in formula. Currently, there are 573 school districts in Michigan, 374 of which are in formula and 199 out of formula.

For the 1984-85 school year, Governor Blanchard will seek greater equity in per pupil financial resources among school districts. A second consecutive increase in state aid to education would affirm the priority status of education in Michigan and would increase the likelihood of quality education for all students. regardless of ethnicity, socioeconomic status, geographical locale, and other differences.

(See Appendix D for two recent Detroit Free Press articles on Governor Blanchard's plans for Michigan schools; Appendix E for a chart showing that Michigan is above the average level of per-pupil spending ; and Appendix F for a chart estimating the percent of revenue for public elementary and secondary schools from local, state, and federal sources, 1982-83.)

Speaker's Ad Hoc Committee on K-12 Education

In mid-September, 1983, Representative Gary M. Owen, Speaker of the House, established a bi-partisan Ad Hoc Committee to study Michigan's K-12 education system. This committee is co-chaired by Representative William Keith and Representative James E. O'Neill, Jr., Chairmen of the House Education and Appropriations Committees, respectively. According to the charge from the Speaker, the committee was instructed to

> study the efficiency and cost effectiveness of the total K-12 system, including, but not limited to, consideration of methods to promote cooperative efforts among local school districts to avoid unnecessary and costly duplication; to provide financial incentives to encourage local districts to streamline the effective delivery of quality K-12 education services; and to reduce the financial disparities that exist among local school districts, within existing fiscal constraints.

During the fall of 1983, the Ad Hoc Committee held seven public hearings throughout the state. Work of the committee will culminate in a statewide invitational conference in Lansing on February 15 and 16, 1984.

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[4] In formula school districts are those which qualify for basic state aid.

Special Interest Groups and Public Support

Statewide education organizations and associations are also reviewing national studies, assessing what is in Michigan, and offering recommendations for a strengthened system. Some of their proposals call for a comparable basic education to be offered by all Michigan high schools, increased minimum learning time, expansion of cooperative programming, and strategies to attract and retain the best classroom teachers.

Public interest and attention is exemplified in an overall grassroots movement which seems supportive of efforts toward education improvement. A statewide public opinion poll was conducted in June, 1983 by the Michigan State Board of Education's Project Outreach. Michigan citizens indicated that they want tougher standards for both students and teachers in Michigan and they are not anxious to give more money to education — but will if their financial investment will "help finance major improvements in the public schools."

Further, Michigan residents generally expressed confidence in the work of their public schools. On a grading scale from A to F, about 47 percent gave their schools an A or B on quality of work, and 27.5 percent more gave the schools at least a C — for a 75 percent positive public rating of Michigan schools. Such confidence and support can only facilitate the comprehensive effort of making Michigan's good education system even better.

Michigan State Board of Education

The Michigan State Board of Education has been engaged in a two-pronged approach to education reform in this state. The State Board is stimulating local assessments and has undertaken a coordinated statewide plan of action. The former strategy includes encouraging school districts to establish local "school excellence" committees; to review reform reports, analyze issues and findings in the reports; and to initiate plans of action in the context of local needs, interests and resources. The Michigan State Department of Education has distributed over 3,000 informational kits to assist local educators and citizens with the process.

The statewide strategy involves an exhaustive review by the State Board of Education of the major issues discussed in the national reports. At the January 10 and 11, 1984 meetings of the State Board, a subset of final recommendations from the High School Commission and previous State Board deliberations will be incorporated into a document entitled, "Better Schools for Michigan Citizens: Blueprint for Action."

Michigan Commission on High Schools

The Michigan Commission on High Schools was established in 1982 by the Michigan State Board of Education and the Michigan Association of Secondary School Principals "to promote excellence in high schools and to make recommendations to the State Board of Education regarding the future of Michigan's seven hundred secondary schools." To accomplish its

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tasks, the Commission reviewed results of the June, 1983 public opinion survey regarding issues defined by The Nation At Risk report; surveyed high school principals, of whom 400 responded; visited 28 high schools to meet and talk with students and staff; and conducted five public hearings throughout the state during September and October, 1983.

The Michigan State Board of Education received the High School Commission's final report on December 14, 1983. The major recommendation in this report calls for adoption of the following core curriculum required of all high school graduates:[5]

- Four years of communication skills, including reading, grammar, literature, writing, speaking and listening
- Two years of mathematics, including at least one course covering algebraic concepts
- Two years of science, including both a biological and physical science
- Three years of social studies, including the areas of government, history, economics, cultural and ethnic studies, and law-related studies
- Two years in one of the following areas: (a) foreign language, (b) fine or performing arts, or (c) vocational education or practical arts
- One year of health and/or physical education
- One-half year of computer education
- Students considering attendance at a four-year college or university should also complete the following:
    - (a) One additional year of mathematics, making a total of three years, including algebra, geometry, advanced algebra, and trigonometry
    - (b) One additional year of science, making a total of three years, including biology, chemistry, and physics
    - (c) Two years of a foreign language.

Further, the High School Commission recommended that alternative programs with strong support service components be developed to address the differing levels of student achievement and personal development; that local school boards establish competency standards covering reading and mathematics skills for promotion and graduation; and that continuity of student and program expectations be assured between elementary, middle and high school programs.

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[5] At present, the only required course for Michigan high school students is a one-half year civics course.

In line with strengthened high school graduation requirements, the Commission recommended that universities and four-year colleges require that incoming students demonstrate proficiency in reading, writing, mathematics, science, and foreign languages for admission. Community colleges should remain open to all individuals.

The Commission recommended several actions for school districts to increase the amount of productive learning time for students: lengthen the middle, junior and high school day to at least six class periods and the school year to a minimum of 1,000 instructional hours and 185 instructional days[6] — with the increased time tied to state school aid; and establish, monitor, and enforce policies related to student conduct, homework, and attendance.

The Commission also recommended that staff development funds within Section 97 of the School Aid Act be increased and targeted for use in the improvement of teaching skills in English, mathematics, science and computer technology. The Commission called for strong certification standards for all educators, including building administrators; a leadership academy for the continuing education of school personnel; and a requirement by local boards that teachers participate in professional development programs.

Further, the Commission recommended that exemplary high schools and high school programs be recognized, that more cooperative programming be initiated to offer advanced high school courses, and that other appropriate actions to assure continual progress be put into place.

Work of the Michigan Commission on High Schools is the first such comprehensive survey in modern Michigan history.

(See Appendix G for the final report of the Michigan Commission on High Schools.)

ARTICULATION BETWEEN K-12 AND HIGHER EDUCATION

Among the challenges facing Michigan's higher education system are how to take better advantage of the symbiotic relationship between secondary schools and postsecondary institutions to effect the strongest possible learning continuum in this state. For example, improved preparation of teachers can help raise the standards of schooling which can, in turn enhance the preparation of students for college, the world of work and the responsibilities of citizenship. Renewal and revival in one sector impinges upon the other. The circumstances of teacher and learn are as inextricably bound as are K-12 schools and institutions of postsecondary education.

To illustrate the implications of this relationship, several statistics merit summarizing:

- Michigan has a 72.5 percent high school completion rate;[7]

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[6] The current requirement in Michigan is 900 instructional hours and 180 instructional days.

[7] Source: National Center for Education statistics. See Appendix H for a chart showing 1981 high school graduate and nongraduate rates as a percent of ninth-grade enrollments four years earlier.

- Of that group of graduates, 90-91 percent have historically enrolled in some form of study in Michigan's institutions of post-secondary education;[8]

- Conversely, review of statewide dropout rates by racial-ethnic groups shows an alarming pattern of dropouts, particularly during the tenth and eleventh grades. (See Appendix J for chart).

Broad support for public schools is a condition for quality of life in Michigan. A major question to Michigan's system of higher education is how to effectuate shared responsibility and cooperative planning for qualitative reform of public schooling in Michigan. Ernest L. Boyer, President of the Carnegie Foundation for the Advancement of Teaching addresses the necessity of meaningful articulation in this observation:

> The quality of public secondary education depends in large measure on the quality of the connections between the school, the college and other segments of society.

Three key issues closely relate to the role of higher education in promoting better articulation with K-12 schools:

- curricular reforms which may influence the development of competencies needed to succeed in college;
- teacher training reforms which may influence the quality of prospective teachers;
- quality teaching reforms which may enhance teacher performance.

The national reports propose supporting policies and practices which higher education should adapt to significantly unify education at all levels.[9] Some of these actions are restated as questions for consideration by the Governor's Commission on the Future of Higher Education.

Issue One: Curricular Reforms

Americans believe that education is an investment in our nation. In order that all students be provided a full educational foundation, they will require a more intensive and productive academic experience, including expanded essential skill areas, higher performance standards, and more intense graduation requirements.

Many would argue that a common education foundation should be required of all youth and should consist of English language development and writing, computational and problem solving skills, computer competency, science, social studies, foreign language, the arts, and career awareness/job readiness, including vocational education. A prescribed course of study would, then, define high school graduation and college entrance requirements.

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[8] Source: Michigan Department of Education, Financial Assistance Services: "Report on Educational Plans of Michigan High School Graduates, 1982.", (See Appendix I for a summary of this report.)

[9] Particularly useful source, Education Commission of the States pamphlet, "Actions for College and University Leaders."

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Some of the national reports call for periodic testing of general achievement, accumulated knowledge, and specific skill development of students, as well as exit testing as a prerequisite to graduation. At question is how reliable are grades and test scores as indicators of student progress and readiness for further study, for the world of work, and for life role functioning.

A most forceful consideration in the national reports is the balance between access and equity and educational quality. While reform and innovation of the entire K-12 education system should benefit all students, such change will have varying impacts on special populations. These include female students, gifted and talented youth, ethnic minority, language minority, handicapped, socio-economically disadvantaged, and any other students who need equal opportunity and support in achieving to the limits of their capabilities.

An additional concern is maintaining quality programs for "special populations." The schooling experience must not emphasize programming for gifted and talented youth and deemphasize the needs of today's students whose interests are not consistently embraced by all educators or whose personal endowments or life experiences place them at the opposite end of the achievement continuum. This presents a major challenge to higher education: due to dramatically shifting demographic patterns, today's K-12 special populations will be tomorrow's clientele of postsecondary education institutions.

Questions pertinent to articulation between K-12 and higher education include:

- *What learning expectations should exist for a Michigan high school diploma and what prerequisite curriculum is appropriate?*
- *Should teachers and administrators in K-12 schools and in institutions of higher education collaborate in defining curriculum requirements for a high school diploma and admissions standards for college entrance?*
- *How can university research on student achievement and other school related issues be applied to strengthening the academic experience of grade school and high school students?*
- *What activities can be expanded, and new possibilities explored, to inform students and parents of the options for higher education, to promote earlier preparation for college, and to expose students to the college setting?*

Issue Two: Teacher Training Reform

Recommendations about quality teachers and teaching are proposed in all of the national reports on K-12 education reform. Although success and satisfaction by a student is contingent upon a number of tangible and intangible factors, teachers are pivotal in the learning process. The

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national reports cite the need for a new and higher regard for teachers which, in turn, will make the profession a more viable option for outstanding graduates of our nation's colleges and universities.

The turbulent 1960's in America heralded greater access by women and ethnic minorities to higher education and better paying jobs. Perhaps the most profound loss to public schooling is of science and mathematics majors who are lured away from teaching by business and industry — which offer higher salaries, more diverse responsibilities, and professional prestige, as well. Several recruitment incentives are proposed in the national reports, including full tuition scholarships for selected prospective teachers and forgiveness loans for teachers entering such critical need areas as English, mathematics, science and computer technology.

The national reports call for strengthening admission standards into colleges of education and more rigorous teacher training curricula including academic content and teaching methods. The national reports contend that every student has the right to be taught by a teacher with subject matter competency and endorsement to teach at specific grade levels, based on developed understanding of the social and cognitive skill development of youth. In essence, teachers should be as well schooled as society expects their students to become.

(See Appendix K for a chart detailing the average combined verbal and mathematics scores on Scholastic Aptitude Tests of all college - bound high school seniors, compared with those seniors planning to major in education.)

Questions pertinent to articulation between K-12 and higher education include:

- *What incentives, if any, should be offered to recruit talented students to enter teaching?*
- *How can the full resources of an institution of higher education, including the college of liberal arts, the college of education and other academic departments, be coordinated to improve the training of prospective teachers?*
- *Should institutions of higher education conduct analyses to determine their capability for supporting quality teacher education programs?*
- *What are reasonable expectations of graduates of teacher training programs?*
- *How can the higher education community contribute to restoring dignity to the teaching profession?*

Issue Three: Quality Teaching Reforms

The national reports abound in recommendations about teacher benefits, promotion and retention.

These key considerations are cited as strategies to assure quality teaching.

- improved compensation for teachers
- better working conditions
- strengthened qualifications for continued teaching
- restructured certification codes and practices
- more opportunities for continuing education and for career advancement
- heightened recognition of teaching excellence
- enhanced teacher linkages with resources outside of the world of education.

In considering some of these proposed reforms, it is important to note that hours, wages, and other terms and conditions of employment are subject to the collective bargaining process in Michigan, and final action depends upon agreements reached through negotiations between a local school district employer and its teachers' bargaining unit. For the record, Michigan teachers receive the fourth highest pay in the nation. The average salary in 1982-83 was $23,965, with a 12.8 percent decline in the purchasing power of Michigan teachers from 1972-73.[10] The average age of Michigan teachers is 42 years, a factor which may correlate with a higher average teacher salary as compared to states with younger teacher work forces.

Questions pertinent to articulation between K-12 and higher education include:

- *What training programs can be initiated by colleges and universities for the improved leadership of educators and the improved management of schools?*

- *Can institutions of higher education effect partnerships with school districts and business and industry for more efficient use of educational resources?*

- *What fundamental research on the educational performance of students, teachers and schools should be targeted to the issue of teacher retention?*

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[10] Source: National Education Association. (See Appendix L for 1982-83 average teacher salaries in the United States.)

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CAPITAL OUTLAY DISCUSSION PAPER

STATE OF MICHIGAN

JAMES J. BLANCHARD, Governor

COMMISSION ON THE FUTURE OF HIGHER EDUCATION

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CAPITAL OUTLAY DISCUSSION PAPER

Prepared For

Governor's Commission on the Future of Higher Education

January 1984

Michigan's four-year public colleges and universities operate a physical plant with an estimated replacement value of $4.6 billion and our community college system has an estimated replacement value of $900 million. The total higher education fiscal year 1985 maintenance, renovation and new construction capital outlay budget requests approach $1.5 billion. Engineering deans argue that major technical equipment needs exceed $78 million. This discussion paper briefly outlines the maintenance, new facility and equipment problems now being encountered by the system and identifies some questions that need to be addressed by the Commission.

Capital Outlay Process

Before problems and solutions can be fully understood, a general understanding of the state's capital outlay funding process is necessary.

A complex process for construction of major non-highway capital outlay projects has been established by law and legislative and executive policy. When followed, the process usually requires a number of years to complete and mandates at least nine separate technical bureaucratic approvals, two gubernatorial approvals, and six legislative approvals. These procedures, however, are often circumvented and projects are frequently stalled at one stage for years.

Higher education maintenance and new construction projects are financed primarily by the following financing sources: state general fund-general purpose funding, the State Building Authority and institutionally generated funds. However, as the following matrix shows, all sources of financing are not available for all projects.

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CAPITAL OUTLAY FUNDING MECHANISMS

Financing Source	Maintenance Projects 2-Year	Maintenance Projects 4-Year	New Construction 2-Year	New Construction 4-Year
State General Fund		X	X	X
State Building Authority				X
Institutional Revenue	X	X	X	X

Problems

1. Existing Facilities:

A major issue confronting the system is deferred maintenance. It has been argued by the Presidents' Council of State Colleges and Universities that budget restrictions have resulted in inadequate physical plant maintenance and, "If no state action is taken, buildings will be lost." A recent survey conducted by the Department of Management and Budget identified $125 million in deferred college and university projects (see Table I).

Another issue associated with the existing physical plant is the degree to which it can be converted to new uses. The Higher Education Capital Investment Advisory Commission, chaired by William Agee, concluded in its 1980 report, "Sufficient physical capacity probably exists for higher education, but it is geared improperly to meet future needs." Can, for example, underutilized traditional classroom space be converted to house technology programs?

Finally, Michigan's K-12, community college, and college and university sectors geographically overlap and this close proximity of facilities may offer opportunities for more efficient physical plant utilization. For example, as K-12 enrollment declines, it is possible that its surplus facilities could be utilized by the higher education sector. Similarly, K-12 vocational/technical centers may inefficiently duplicate community college technical centers. Currently, however, no mechanism exists to encourage or develop inter-sector facility resource sharing.

2. New Facilities:

Given the size of the demand for new facilities, it seems reasonable to conclude that the state's financial resources are inadequate to fully meet the demand. As Table II shows, the total cost of the system's current requests is about $1.5 billion. Of this amount, construction has begun or is authorized to begin on projects costing a total of $385 million, about 25 percent of the total requests. Even if the state only constructed each institution's top priority project, an additional $200 million would be required. (See Tables III and IV)

Funding constraints are exacerbated by the fact that the State Building Authority's statute-imposed $400 million bonding limit has now been reached and additional funds cannot be borrowed unless the Legislature raises the limit.

3. Major Equipment:

The equipment demands of Michigan's higher education institutions has immerged as an important capital funding issue. All curricula have equipment needs, but the most costly needs appear to be in those areas that are increasingly utilizing sophisticated equipment that quickly becomes technologically obsolate. In the community college sector, robotics and computer graphics are two subject areas in this category which utilize very costly equipment. Colleges and universities have significant needs in such areas as biomedical sciences, engineering and the physical sciences.

One of the few comprehensive inventories of equipment needs is an inventory compiled by the Michigan Society of Professional Engineers. The Society argues that, "Advanced engineering equipment is critically important if engineering schools are to provide the type of educational opportunities that industry needs. There is a critical shortage of modern equipment." It feels $78 million will be needed to eliminate the shortage. (See Table V.)

Finally, it should be noted that the state traditionally has not separately financed equipment purchases. Equipment is funded through the capital outlay process only if it is needed to equip a new facility. Equipment replacement, or equipment not associated with a new building, is purchased by the institutions at their discretion through their general operating budgets or various restricted funds.

Questions

Given the above problems, the following basic questions need to be resolved by the Commission:

1. What is the appropriate role for the state to play in maintaining and organizing Michigan's higher education physical plant?
2. What is the appropriate state role in the area of equipment acquisition?
3. What new facilities are needed by the system?
4. Is joint utilization of the existing physical plant feasible?
5. What are the best funding and allocation mechanisms to implement these roles?
6. Should the March 1984 preliminary progress report include capital outlay recommendations?

Table I

SUMMARY
HIGHER EDUCATION
DEFERRED MAINTENANCE*
(Dollars in Thousands)

INSTITUTION	NEED**		
	CATEGORY I	CATEGORY II	CATEGORIES III & IV
Central Michigan University	$	$ 1,025.0	$ 3,878.0
Eastern Michigan University		1,130.0	7,483.0
Ferris State College			1,349.0
Grand Valley State College	83.0	875.0	800.0
Lake Superior State College	470.0		1,750.0
Michigan State University	946.0	4,001.0	21,640.0
Michigan Technological Univ.	100.0	3,254.0	6,088.0
Northern Michigan University	470.0	11,895.0	3,010.0
Oakland University	224.0	34.0	1,644.0
Saginaw Valley State College	115.0	100.0	100.0
University of Michigan-AA	1,937.0	1,010.0	8,933.0
University of Michigan-D			4,272.0
University of Michigan-F			
Wayne State University	4,824.0	8.971.0	13,795.0
Western Michigan University	230.0	8,860.0	475.0
Total	$9,399.0	$41,155.0	$75,217.0

*Source: Department of Management and Budget, "Deferred Maintenance: Current Backlog at State Facilities", 1983.

**Categories of need are defined in the above study as follows:

I. Immediate: If not accomplished, will result in serious and irrevocable loss or damage.

II. Urgent: If not accomplished, will shortly deteriorate into a Category I condition.

III. Imperative: If not accomplished, will jeopardize the continued usefulness of the facility.

IV. Essential: All other projects necessary to renew or restore the facility.

Table II

SUMMARY OF FISCAL YEAR 1985

HIGHER EDUCATION CAPITAL OUTLAY REQUESTS

(Dollars in Millions)

	Colleges and Universities	Community Colleges
"Lump Sum" Maintenance	$ 27.2	
Projects in Planning		
- Early	479.7	$ 68.6
- Authorized by Legisture	468.3	53.9
Projects in Construction	385.0	
Total Cost	$1,360.2	$122.5
Sources of Financing:		
State General Fund	$ 991.0	$ 53.3
State Building Authority	221.1	
Other	148.1	69.2
State General Fund Appropriated to Date	$ 29.3	$ .4

Table III

COLLEGE AND UNIVERSITY

HIGH PRIORITY CAPITAL OUTLAY REQUESTS*

(Dollars in Thousands)

Project	Total Cost	State General Fund	Building Authority	Institution	Construction Authorized
1. Central Michigan University -Industrial Education and Technology Bldg.	$ 15,000.0	$ 15,000.0			No
2. Eastern Michigan University -Powerhouse Switchgear Replacement	750.0	750.0			No
3. Ferris State College -Heavy Equipment Technology Bldg.	6,600.0	6,600.0			No
4. Grand Valley State College -Grand Rapids Center	19,300.0	19,300.0			No
5. Lake Superior State College -Campus Access Roads	75.0	75.0			No
6. Michigan State University -Plant and Soil Sciences Bldg.	29,000.0	7,128.4	21,871.6		Yes
-Engineering Bldg. Addition and Remodeling	28,250.0	28,250.0			No
7. Michigan Technological Univ. -Sherman Gymnasium Remodeling, Arts and Humanities, Phase I and II	3,600.0	1,000.0		2,600.0	Yes
-Bio-Technology Bldg.	21,800.0	21,800.0			No
8. Northern Michigan University -Steam and Condensate Loop	11,376.0	11,376.0			No
9. Oakland University -Library	7,810.0	7,810.0			No
10. Saginaw Valley State College -Instructional Facility No.2 and Library	28,400.0	5,060.0	23,340.0		Yes
-Lighting and Walks	82.0	82.0			No

11.	University of Michigan-Ann Arbor					
	-Hospital Replacement Project	$285,000.0	$ 29,600.0	$140,000.0	$115,400.0	Yes
	-Engineering Bldg. I	29,650.0	2,650.0	27,000.0		Yes
	-Chemical Sciences Bldg.	60,000.0	30,000.0		30,000.0	No
12.	University of Michigan-Dearborn					
	-Library/Cafeteria Renovation	2,862.0	2,862.0			No
13.	University of Michigan-Flint					
	-Classroom/Laboratory Bldg.	23,857.0	23,857.0			No
14.	Wayne State University					
	-Engineering Bldg. Renovation/Addition	12,994.0	2,107.0	8,887.0	2,000.0	Yes
	-Mackenzie Hall Renovation	8,000.0	8,000.0			No
15.	Western Michigan University					
	-Paper Science Pilot Plant	1,296.0	1,296.0			Yes
	-Space Renovation Project	1,250.0	1,250.0			No

*As identified in fiscal year 1985 budget requests

Table IV

COMMUNITY COLLEGE
HIGH PRIORITY CAPITAL OUTLAY REQUESTS*
(Dollars in Thousands)

PROJECT	TOTAL COST	STATE GENERAL FUND	INSTITUTION	CONSTRUCTION AUTHORIZED
1. Bay DeNoc Community College -Learning Resource Center	$ 3,250.0	$ 1,625.0	$ 1,625.0	No
2. Delta College -Remodeling	75.0	37.5	37.5	No
3. Jackson Community College -Instructional Resource Center	5,460.0	2,730.0	2,730.0	No
4. Lake Michigan College -Educational Building	13,860.0	1,065.0	12,795.0	Yes**
5. Lansing Community College -High Technology/Transportation Training Facility	21,700.0	10,850.0	10,850.0	No
6. Macomb Community College -Industrial Technology Complex Energy Retrofit	1,500.0	1,500.0		No
7. Mid Michigan Community College -Classroom/Student Services/ Administration Building	4,460.0	1,340.0	3,120.0	No
8. Mott Community College -Gorman Building Renovation	750.0	375.0	375.0	No
9. Muskegon Community College -Allied Health Building	1,650.0	1,650.0		No
10. Northwestern Michigan College -Maintenance Facility	500.0	250.0	250.0	No
11. Southwestern Michigan College -Library Renovation	600.0	300.0	300.0	No
12. St. Clair County Community College -Renovation of North Building	1,650.0	825.0	825.0	No

* As identified in fiscal year 1985 budget requests

**Construction has been authorized, $415,000 in state funds have been spent, and a building shell constructed; but, because of a lack of local funds, construction has been halted.

Table V

SUMMARY

ENGINEERING LABORATORY EQUIPMENT FUNDING REQUESTS*

Lawrence Institute of Technology	$1,679,000
The University of Michigan--Ann Arbor	21,170,000
The University of Michigan--Dearborn	2,345,000
Michigan State University	15,002,000
Michigan Technological University	15,827,000
Oakland University	3,300,000
Wayne State University	14,991,000
Western Michigan University	3,940,000
Total	$78,254,000

*"The Engineering Laboratory Equipment Crisis in Michigan Universities," Michigan Society of Professional Engineers, April 1983.

OCCUPATIONAL SUPPLY AND DEMAND AND POSTSECONDARY EDUCATION

STATE OF MICHIGAN

JAMES J. BLANCHARD, Governor
COMMISSION ON THE FUTURE OF HIGHER EDUCATION
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OCCUPATIONAL SUPPLY AND DEMAND AND POSTSECONDARY EDUCATION

prepared for

THE GOVERNOR'S COMMISSION ON THE FUTURE OF HIGHER EDUCATION

January 3, 1984

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SUMMARY

One of the Commission's stated goals of postsecondary education in Michigan is to "prepare individuals to assume productive employment, to lead satisfying lives, and to be effective citizens and leaders." This paper focuses on postsecondary institutions' role in preparing individuals for productive employment. The role of postsecondary education in preparing students to (1) lead satisfying lives, and (2) be effective citizens and leaders is not addressed in this paper, but is clearly germane to the future discussion of the Commission regarding overall quality in instruction.

The purpose of this paper is exclusively to provide an overview of ways in which postsecondary education can prepare individuals to assume productive employment. It includes a discussion of the available information on occupational supply and demand, its limitations and usefulness, and--for purposes of discussion--several questions the Commission might consider.

To summarize the contents:

1. An adequate occupational supply and demand data base exists that could provide some direction for decision making, if reasonable assumptions are made. The information is most useful for specific occupational areas where there is a clear relationship between the field of study and the occupation. This same is not necessarily true for those occupations where there is no clear link between the field of study (philosophy, for example) and the subsequent occupation.

2. There currently is no uniform, comprehensive mechanism in Michigan to incorporate occupational supply and demand information into state decisions on higher education.

3. There are at least three ways in which higher education can use occupational supply and demand information. It could:

   a. anticipate and plan for imbalances in supply and demand;
   b. initiate action to attract or create job openings; and
   c. provide information on the employment status of graduates and overall occupational supply/demand outlook to its student consumers to encourage more informed individual choices.

4. Higher education could also strengthen available supply and demand data by providing employment information on its graduates to labor market analysts, high school counselors, and students.

KIND OF INFORMATION AVAILABLE

A variety of occupational demand and/or occupational supply information is available currently. Studies differ according to a number of characteristics, such as:

1. Measure of Supply or Demand: There are essentially two kinds of analyses:

   * Demand: In general, analyses of demand are most available. These analyses project the number of job openings, but do not project the number of potential workers to fill those jobs. Demand projections are therefore limited in the contribution that they can make to planning efforts because they do not project occupations in which an imbalance might exist between supply (the potential number of workers) and demand (the potential number of jobs).

   * Supply and Demand: The development of supply forecasting capability has lagged behind that of demand. Major problems have been: (1) the supply data has been based on educational classification categories which are not easily converted to occupational categories in order to be compared with the demand projections, and (2) some supply forecasts assume the number completing various educational programs will be constant over time rather than trying to actually forecast increases or decreases.

Unfortunately, supply and demand analyses are not currently available for all occupations at either the state or national level. In general, supply and demand projections are available for occupations that relate closely to specific fields of study. Examples are: (a) vocational programs such as cosmetology or welding, and (b) many professional programs such as dentistry or teaching.

Projections of supply and demand are not currently available for occupations that draw from more general fields of study, such as liberal arts. In many degree areas, graduates may enter a diverse array of occupations. Often, the paths between the degree programs and the occupational categories are so diffused that it is difficult to determine the link between potential supply and demand.

2. Time Period: They may describe the current situation or estimate it two, five, or ten years into the future.

3. Economic Sector: Some projections are done for the economy as a whole. That is, all industrial sectors or all occupational categories are projected first, then the aggregate is broken down into its component parts. Other projections look just at one sector or occupational category such as engineering or legal services.

4. Labor Market Sector: Some analyses are for very particular groups of people such as for graduates of a certain university or members of a

particular profession.

5. Geographic Scope: There are projections for the United States, for Michigan, and for sub-state areas.

6. Classification System: In order to be able to compare different demand and supply projections, the categories of workers must either be the same or translatable one into the other.

The following section discusses specific analyses that are available.

SOURCES OF INFORMATION

There are a number of sources of information on occupational supply and/or demand:

(1) Federal and state government agencies prepare projections for the nation and the state.

(2) Individual postsecondary institutions currently report to the federal government on degrees conferred as part of the Higher Education General Information Survey (HEGIS). Individual postsecondary institutions may also collect placement data on their own graduates, or generate projections as part of research or forecasting programs.

(3) Professional organizations, trade groups, and private research organizations may prepare projections for specific occupations.

(4) The Office of Economic Forecasts of the Michigan Department of Commerce will provide supply/demand data in the future. The program is now in the planning stages and has not yet generated information that could be included in this paper.

(5) Private, for-profit firms, such as Chase Econometrics, produce projections at the national and state level.

This section discusses national and state projections and placement information compiled by some postsecondary institutions in Michigan. For purposes of brevity, it does not address (1) specific occupational projections by professional organizations, trade groups or research organizations, (2) the Michigan Targeted Industries Programs, or (3) for-profit forecasting services. (The Michigan Department of Commerce Office of Economic Forecasting is reviewing private projections and will incorporate them into the information that they will be generating in the future.)

The projections discussed in this paper were selected in consultation with a group of experts in the field of labor market information (Attachment A provides a list of participants).

The following chart identifies and summarizes the general characteristics of each projection. Information is grouped into three separate categories by geographic scope and type of analysis.

1. National Projections

2. Michigan Specific Projections

3. Institution Specific Placement Data

A more detailed discussion of each projection follows the chart.

SUMMARY OF INFORMATION SOURCES

OCCUPATIONAL SUPPLY AND DEMAND

Sources	Type of Information	Projection Period	Economic Sector/ Labor Sector	Comments
1. NATIONAL				
A. U.S. Department of Labor: Bureau of Labor Statistics (USDOL/BLS)	Demand Projections	1980-1990	All established occupations; by occupation.	These USDOL-BLS demand projections do not address the potential supply of workers.
B. University of Michigan, Institute of Labor and Industrial Relations Under a grant from the U.S. Dept. of Labor	Supply/Demand Projections	1980-1983	121 of 380 Occupations that require more than 1 year of training, by occupation.	This study focuses on a select number of occupations. Its focus is national. That is, the findings might not apply to specific geographic areas.
2. MICHIGAN SPECIFIC				
A. Michigan Employment Security Commission (MESC) & U.S. Department of Labor: Bureau of Labor Statistics	Demand	1980-1990	All occupations; by occupation.	These MESC projections are based on the USDOL-BLS demand projections. They do not address potential supply.
B. Michigan Occupational Information Coordinating Committee and Michigan Employment Security Commission	Supply/Demand	1980-1985	Occupations related to vocational/technical education and training; by occupation.	These MOICC/MESC projections do not cover "professional" occupations, rather they focus on vocational/technical education.*
C. Institute of Labor and Industrial Relations— The University of Michigan	Supply/Demand (proposal is pending)	1984-1987	Individual occupations	This proposal by the Institute of Labor and Industrial Relations would be available for substate areas.
3. INSTITUTION SPECIFIC				
A. Placement Information	Supply/Demand	Usually by term, semester or year	Occupations in which graduates of the specific institutions are placed.	Placement information and follow-up studies can provide institution-specific information on the short-range job outlook for graduates.
B. Follow-up Surveys	Supply/Demand	No uniform standard	Occupations in which graduates of the specific institution are placed.	Placement information and follow-up studies can provide institution-specific information on the short-range job outlook for graduates.

* MESC is developing projections for professional occupations for the state and substate areas.

1. National Projections

   A. Demand Projections: United States Department of Labor, Bureau of Labor Statistics: USDOL-BLS produces long-range and short-range projections on a regular basis. The long-range demand projections are for the period from 1980 to 1990. They cover all occupations, and are based on detailed BLS models of the national economy which are eventually broken down into 50 state economies (see the following section). BLS makes adjustments based on specific industry studies.

   B. Supply and Demand Projections: University of Michigan, Institute of Labor and Industrial Relations: Under a grant from the United States Department of Labor, the Institute of Labor and Industrial Relations at the University of Michigan prepared occupational supply and demand projections for 121 of 380 occupations that require more than one year of training. The projections were released in 1982. The projection period is 1980 to 1983. The purpose of the projections was to provide a basis for legally allowing immigrants into the United States to provide adequate labor supply in specific occupations where the demand clearly exceeded the available supply.

   The study urged the establishment of a technical review committee to validate its methodology. Preliminary conclusions were that of the 121 occupations studied:

   * 13 were "supply-deficient," that is, the projected supply of workers did not meet projected job demand. The 13 "supply-deficient" occupations are listed below:

     Aero-astronautic engineers
     Computer programmers
     Computer systems analysts
     Electrical engineers
     Industrial engineers
     Mechanical engineers
     Professional nurses
     Physical therapists
     Medical lab technologists
     X-ray technicians
     Surgical technicians
     Dental assistants
     Electrical and electronic technicians

   * 28 were potentially "supply-deficient," and

   * 80 were not "supply-deficient."

2. Michigan Specific Projections

   A. Demand Projections: Michigan Employment Security Commission (MESC):

   The foregoing subsection discussed national demand projections prepared by the United States Department of Labor, Bureau of Labor Statistics. The Michigan Employment Security Commission (MESC) uses the national projections in preparing its demand analyses for the state. MESC projects employment in 1400 different occupations based on current survey data of industry staffing patterns in the state.

The models incorporate numerous assumptions about demographic and economic activity levels including projected population, income, motor vehicle production, labor force participation, productivity, etc. In addition to the number of job openings due to growth in employment, the projections include the number of openings due to workers dying, transferring to a different occupation or withdrawing from the labor force.

B. Supply and Demand Projections

1. Michigan Occupational Information Coordinating Committee (MOICC) and Michigan Employment Security Commission (MESC) have developed Occupational Supply and Demand (OSD) reports for occupations that relate to vocational/technical education in the state and 14 sub-state areas. In these reports, information on the future relation between supply and demand is given for the years through 1985 for certain vocational/technical occupations. Development of a report addressing the professional occupations in Michigan is planned for later in 1984.

   The methodology used is to analyze each occupation on the basis of eight different indicators, including some estimates of the relationship between institutional supply (i.e. educational institutions) and projected demand in both the short and long-run.

   A problem with measuring supply/demand is that the universe of supply is difficult to capture. The sources include data on the unemployed, data on people who complete four year college and professional degree programs, associate degrees, public and private vocational programs. Some graduates of educational or training programs do not enter the labor force; they may, for example, pursue another degree immediately. Therefore, for this and other reasons, the supply data is more apt to contain omissions and some double counting.

2. The Institute of Labor and Industrial Relations of the University of Michigan prepares information on the aggregate labor force by geographic area within the state. These short-range projections (1-3 years) do not identify specific occupations.

   The Institute has also recently advanced a proposal for a three-part research study entitled, "Jobs for Michigan," which would include:

   * An econometric model for policy analysis and forecasting at the state level,

   * Employment forecasts by occupation and industry for the state and sub-areas of the state, and

* A study of firms that leave, locate in, or expand in Michigan.

This three-year study would cost $1.5 million. The Institute has secured funding commitments for the econometric model for policy analysis and forecasting at the state level. It is currently seeking funding for the other two components.

3. Institution Specific Data

A. Placement Data: Placement data can provide short-range information on the balance between supply and demand for graduates of a particular institution. There is no common standard for postsecondary institutions to collect or use information on the employment status of graduates. Each educational institution differs in (A) whether it collects data, (B) the extent of information collected and (C) how the information is used.

Institutions that offer placement services often do maintain statistics on initial employment of graduates who have used the placement service. According to the Michigan Organization of Private and Vocational Schools, proprietary institutions (those that focus on specific occupations and are often, though not always, privately owned) frequently use placement data to determine program offerings and content. The Association of Community Colleges reports, however, that informal mechanisms, such as ad hoc advisory groups composed of business as well as academic interests, are used to determine program offerings. This link between placement data and program offerings is crucial to these limited purpose institutions, since their survival and prosperity directly depend on how well they meet the requirements for labor in the occupations they serve.

No survey exists of the extent to which public and other private institutions compile and utilize placement data. Attachement B provides samples of placement information published by one placement office at a public university (Michigan State University) for general distribution.

B. Follow-up Surveys: Some institutions also conduct more extensive follow-up surveys of all graduates which can provide information on the existing labor market status of graduates of the particular institution. These surveys may include information on:

* occupations by degree type and/or major,

* percent of graduates who secure employment in occupations related and unrelated to their field of study,

- unemployed or underemployed graduates, and
- salary trends (since an oversupply of certain graduates tends to depress relative salaries, and vice versa, salary data can be a direct measure of the balance between supply and demand).

These follow-up surveys may require a significant commitment of resources by the institution, but have the potential to provide information to individuals and program planners on the labor market outlook for the graduates of that particular institution.

Attachments C and D provide summaries of selected results of follow-up surveys conducted by two postsecondary institutions in Michigan.

C. Employer Surveys: In general, there is considerable informal communication between postsecondary institutions and potential employers. At least one postsecondary institution in Michigan (Michigan State University) conducts a formal, annual survey of employers to determine potential demand for its graduates by program area. The most recent survey of 617 employers examined a multitude of factors, including the following:

- short-term outlook by field of study,
- starting salary offers,
- best geographic regions for employment
- changes in the salaried workforce, such as increases or decreases in employees by occupation,
- selection criteria for new college graduates, including skills and grades that employers expect,
- training provided by employers,
- underemployment among college graduates,
- turnover among new college graduates

Attachment E includes a summary of the most recent survey, and its findings.

THE RELATIONSHIPS BETWEEN HIGHER EDUCATION AND INFORMATION ON OCCUPATIONAL SUPPLY AND DEMAND

A multitude of factors influence the decision of an individual to participate in postsecondary education and to major in a particular field. Often, although not always, a significant factor is the prospect of enhanced employment opportunity.

There are at least four possible ways that higher education can relate to labor market information on occupational supply and demand:

1. Anticipate and plan for imbalances in supply and demand: Information on occupational supply and demand can provide a basis for decisions by the state and individual institutions for programs and facilities. At present, there is no uniform, comprehensive mechanism in Michigan to incorporate information on occupational supply and demand into state decisions on policy direction or funding levels. Individual institutions determine the extent to which they will use available information in their own planning efforts.

   At the same time, the United States Department of Labor--Bureau of Labor Statistics predicts a 15 to 25 percent "surplus" of graduates of 4 year institutions during the period from 1980 to 1990.* A separate analysis of the likely supply/demand balance for Ph.D's for the period from 1976 through 1985** projects a favorable balance for engineering only. Other fields were predicted to be unfavorable for Ph.D's as shown below:

	Projected New Supply of Ph.D.'s, 1976–1985[b]	Estimated Openings for Traditional Ph.D. Employment, 1976–1985	Difference between New Supply and Openings in Traditional Ph.D. Employment[a]	
			Number	Percentage of New Supply
All Fields	323.0	192.8	130.2	40.3
Engineering & natural science	114.7	100.8	13.8	12.1
Engineering	22.7	32.4	−9.7	−42.8
Physical sciences	30.7	27.4	3.3	10.8
Chemistry	16.6	14.7	1.8	11.2
Physics	7.6	3.7	3.9	51.2
Life science	51.7	35.4	16.2	31.4
Mathematics	9.6	5.6	4.0	41.6
Social science & psychology	70.5	41.5	29.0	41.2
Arts and humanities	37.0	12.4	24.6	66.6
Education	80.4	31.5	48.8	60.8
Business and commerce	8.0	2.9	5.1	63.6
Other fields	12.4	3.6	8.8	70.8

Note: Figures are in thousands, except for percentages.

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* John Sargent "The Job Outlook for College Graduates During the 1980's," Occupational Outlook Quarterly, Summer 1982, pp 3-7.

**Douglas Braddock "The Oversupply of Ph.D.'s to Continue Through 1985," Monthly Labor Review Vol. 101, No. 10, October 1978.

These data do not address the potentially unique characteristics of (1) the labor market in Michigan, or (2) the predicted balance for subcategories of the larger classifications (for example, undergraduates in engineering as opposed to philosophy, or Ph.D.'s in petrochemical engineering as opposed to electrical engineering). They do, however, portend general trends that raise serious policy questions for postsecondary education, such as those initially posed in the summary of this paper (pages 1-2).

2. Initiate action to affect demand for graduates: Higher education can, and does, take steps to increase the number of job openings through aggressive research, and improved communication between the private sector and the academic community. In Michigan, prime examples of efforts to improve the transfer of information from postsecondary institutions to the business community include:

   - Job training aimed at the specific needs of an individual employer, including programs offered by the proprietary sector and community colleges

   - Technology Transfer Centers to facilitate and coordinate the distribution of information from the academic community to the business community

   - "Centers for Excellence" established to undertake innovative academic and private sector research (the Michigan Biotechnical Institute at Michigan State University, the Industrial Technical Institute at the University of Michigan, and the Metro Center for High Tech at Wayne State University).

3. Provide information to its consumers at key decision points in their academic careers:

   A. General Labor Market Information: Public elementary and secondary schools, all public 2 year institutions, and many public and private 2 and 4 year institutions use the Michigan Occupational Information System (MOIS), which has 2,237 different sites in Michigan. The system is operated jointly by the Michigan Departments of Education, and Labor, and the Michigan Employment Security Commission, at no cost to the users. The system includes demand information produced by the Michigan Employment Security Commission. It does not include projections for supply.

   In addition to demand projections, the MOIS system provides individual students, instructors and counselors with information on wages, training requirements and financial aid.

   B. Placement Information: Some placement offices collect information on the employment status of graduates, and at least one completes an annual employer survey. While this information may be generally available, it is not routinely distributed to individual students at key decision points in their academic careers, such as prior to their decision on a major. (One institution does distribute the attached supply and demand summary, but students are more apt to

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receive the information closer to graduation than initial enrollment. This limit in distribution is due to budgetary constraints).

4. It can strengthen available supply and demand data by providing information on employment of its graduates to labor market analysts: Supply projections generated by state labor market experts now assume that all graduates of postsecondary education enter the labor market and actively seek employment. The reality is, however, that some portion of graduates pursue more education or other interests. Improved communication between institutions and labor market experts could, therefore, refine projection data on the potential supply of workers for various occupations.

CONCLUSION

In summary, there is information available on occupational demand, and, to a lesser extent, occupational supply. In general, information of labor supply compared to job demand is most reliable for occupations that closely relate to a specific field of study. It is less reliable for occupations where there is no clear program for academic preparation. By making reasonable assumptions, the data base that is available can provide some direction for decisions in higher education.

There is no uniform, comprehensive mechanism in Michigan to incorporate occupational supply and demand projections into state decisions on higher education. Individual postsecondary institutions now determine the extent to which they will use or generate information on occupational supply and demand.

The task before the Commission is to review how higher education does utilize and contribute to occupational supply and demand information and to make recommendations on the way higher education should utilize and contribute to occupational supply and demand information. Questions to aid the Commission in its review are discussed in the initial summary of this paper (pages 1-2).

EQUAL ACCESS FOR WOMEN, MINORITIES AND HANDICAPPERS IN HIGHER EDUCATION

STATE OF MICHIGAN

JAMES J. BLANCHARD, Governor

COMMISSION ON THE FUTURE OF HIGHER EDUCATION

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EQUAL ACCESS FOR WOMEN AND HANDICAPPERS IN HIGHER EDUCATION:

A DISCUSSION PAPER

Prepared For

THE GOVERNOR'S COMMISSION ON THE FUTURE OF HIGHER EDUCATION

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PREFACE

The following paper addresses equity and access issues relating to women and handicappers. A separate discussion of the issues is provided for each group. This paper is intended to be considered in conjunction with the "Mason-Miller" report of 1982 (The *Joint Task Force Report on Minorities, Females, and Handicappers in Michigan's Colleges and Universities*, published by the Michigan State Board of Education, Michigan Department of Education, Office of the Governor, and the Department of Management and Budget). The Mason-Miller report provides a particular emphasis on the issues that relate to minorities and does not fully address women and handicappers. Thus, this staff paper augments the "Mason-Miller" report by providing additional detail regarding women and handicappers.

This discussion was developed with the assistance of two working groups:

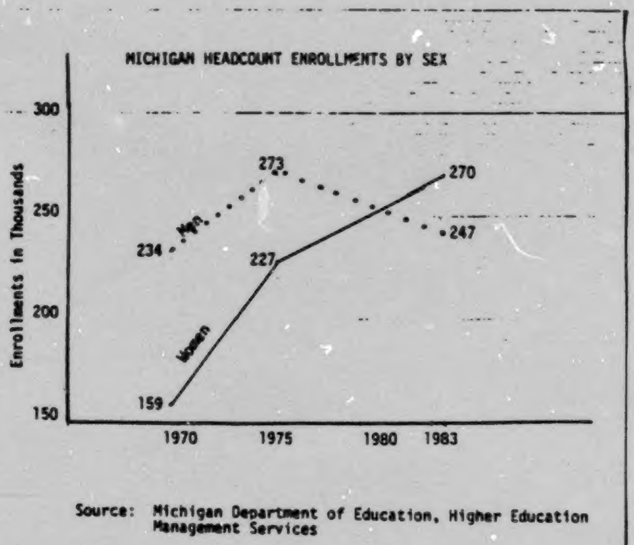
(1) The working group on women consisted of representatives from public colleges and universities, public community colleges, private postsecondary institutions, and the Michigan Department of Civil Rights (Attachment B).

(2) The working group on handicappers included participants from public colleges and universities, public community colleges, private postsecondary institutions, the Michigan Commission on Handicapper Concerns, and the Michigan Department of Education (Bureau of Rehabilitation) (Attachment D).

With the assistance of these groups, a list of the concerns and barriers to full participation for women and for handicappers was developed.

WOMEN

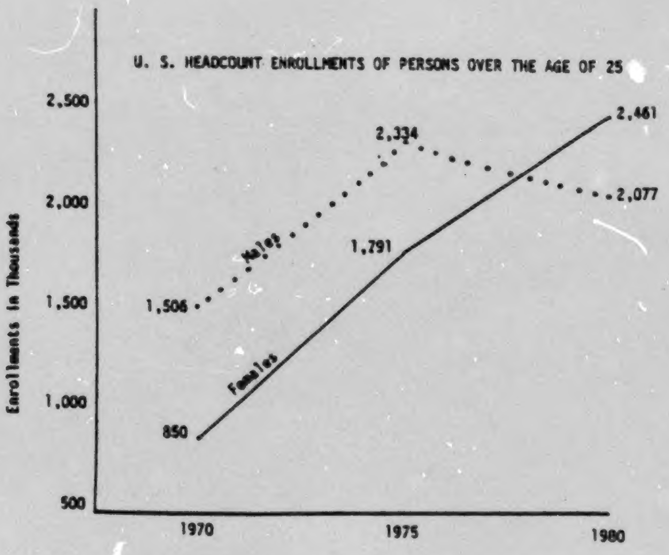
From 1970 to 1983, the number of women enrolled in public and private institutions of higher eudcation in Michigan grew significantly, as illustrated by the following:



Source: Michigan Department of Education, Higher Education Management Services

- The absolute number of women grew almost 70% (from 159,000 to 270,000). By comparison, enrollments of males grew by approximately 6% over the same period, with an actual decline from 1975 to 1983.
- The proportion of women grew from 40% of total enrollments in Michigan in 1970 to 52% in 1983. Conversely, male enrollments went from 60% to 48% over the same period.

The phenomenal growth of female enrollments was due to significant increases in the number of "nontraditional" female students (those 25 years and older). Although age specific data for Michigan are not available for all public and private institutions, national data for the period from 1970 to 1980 show a significant increase in enrollment of both males and females over the age of 25, with the most dramatic growth in female enrollments:



Source: National Center for Education Statistics

- Enrollments by "nontraditional" females increased by 280% and are marked by consistent growth from 1970 to 1983. Those for males in the same age category grew by 37.9%, with growth occuring between 1970 and 1975, and actual declines from 1975 to 1980.

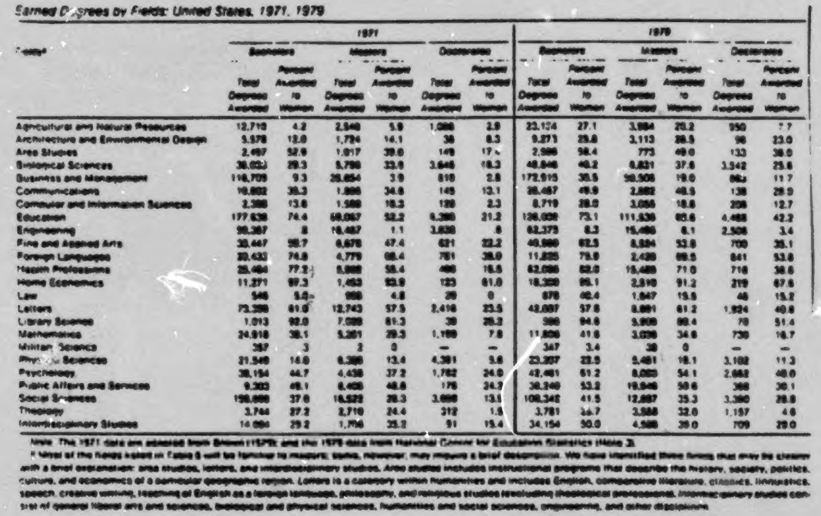
- The proportion of women grew from 37% of "nontraditional" enrollments in 1970 to 54% in 1980.

Problem Statement: Participation by Women

As the foregoing enrollment data document, the number of women in post-secondary institutions increased significantly from 1970 to 1983. The number of degrees earned by women nationwide also grew significantly at all degree levels.

1. Bachelors, Masters and Doctorate Degrees

   As the chart below indicates, women have made substantial progress at the bachelors, masters and doctorate degree levels. Significant imbalances in the number of degrees awarded to women continue to exist, however, particularly in areas traditionally dominated by males.



Earned Degrees by Fields: United States, 1971, 1979

Field^a	1971 Bachelors Total Degrees Awarded	1971 Bachelors Percent Awarded to Women	1971 Masters Total Degrees Awarded	1971 Masters Percent Awarded to Women	1971 Doctorates Total Degrees Awarded	1971 Doctorates Percent Awarded to Women	1979 Bachelors Total Degrees Awarded	1979 Bachelors Percent Awarded to Women	1979 Masters Total Degrees Awarded	1979 Masters Percent Awarded to Women	1979 Doctorates Total Degrees Awarded	1979 Doctorates Percent Awarded to Women
Agricultural and Natural Resources	12,710	4.2	2,540	5.9	1,086	2.9	23,124	27.1	3,994	20.2	950	7.7
Architecture and Environmental Design	5,570	12.0	1,724	14.1	36	8.3	9,273	25.8	3,113	28.5	96	23.0
Area Studies	2,497	52.9	1,017	39.0	149	17.4	2,986	58.4	773	49.0	133	38.0
Biological Sciences	36,033	29.3	5,750	33.9	3,646	16.3	48,846	40.2	6,831	37.8	3,342	25.8
Business and Management	116,709	9.3	26,654	3.9	810	2.8	172,915	30.5	50,506	19.0	862	11.7
Communications	10,802	35.3	1,856	34.6	145	13.1	26,457	49.9	2,882	48.5	138	28.9
Computer and Information Sciences	2,388	13.6	1,588	10.3	128	2.3	8,719	28.0	3,056	18.8	236	12.7
Education	177,638	74.4	88,087	56.2	6,398	21.2	126,028	73.1	111,538	65.6	4,468	42.2
Engineering	50,387	.8	16,457	1.1	3,638	.6	62,375	8.3	15,486	6.1	2,506	3.4
Fine and Applied Arts	30,447	59.7	6,675	47.4	621	22.2	40,969	62.5	8,524	53.8	700	35.1
Foreign Languages	20,433	74.6	4,779	66.4	781	38.0	11,825	75.9	2,429	69.5	641	53.8
Health Professions	25,484	77.1	5,888	55.4	466	16.5	62,086	82.0	15,488	71.0	718	38.6
Home Economics	11,271	97.3	1,452	93.9	123	61.0	18,328	95.1	2,510	91.2	219	67.6
Law	545	5.0	955	4.8	20	0	678	40.4	1,847	15.5	46	15.2
Letters	73,258	61.6	12,743	57.5	2,416	23.5	43,037	57.8	8,891	61.2	1,924	40.8
Library Science	1,013	92.0	7,028	81.3	39	28.2	580	94.8	5,906	80.4	70	51.4
Mathematics	24,918	38.1	5,201	29.3	1,199	7.8	11,806	41.8	3,038	34.8	730	16.7
Military Science	357	.3	2	0	—	—	347	3.4	38	0	—	—
Physical Sciences	21,549	14.0	6,386	13.4	4,391	5.6	23,237	22.5	5,461	18.1	3,102	11.3
Psychology	38,154	44.7	4,438	37.2	1,782	24.0	42,401	61.2	8,039	54.1	2,882	40.0
Public Affairs and Services	9,303	49.1	8,405	48.8	176	24.2	38,240	53.2	19,946	50.6	368	30.1
Social Sciences	155,888	37.0	16,522	28.3	3,659	13.9	108,342	41.5	12,887	35.3	3,390	28.8
Theology	3,744	27.2	2,710	24.4	312	1.9	3,781	26.7	3,588	32.0	1,157	4.6
Interdisciplinary Studies	14,086	29.2	1,706	25.2	91	15.4	34,154	50.0	4,585	39.0	709	29.0

Note: The 1971 data are adapted from Brown (1979); and the 1979 data from National Center for Education Statistics (Note 3).

a Most of the fields listed in Table 5 will be familiar to readers; some, however, may require a brief description. We have identified three fields that may be clearer with a brief explanation: area studies, letters, and interdisciplinary studies. Area studies includes instructional programs that describe the history, society, politics, culture, and economics of a particular geographic region. Letters is a category within humanities and includes English, comparative literature, classics, linguistics, speech, creative writing, teaching of English as a foreign language, philosophy, and religious studies (excluding theological professions). Interdisciplinary studies consist of general liberal arts and sciences, biological and physical sciences, humanities and social sciences, engineering, and other disciplines.

Treimann & Hartmann

As the foregoing chart indicates, women are still concentrated in the traditional female fields of education, fine and applied arts, foreign languages, health professions, home economics and library science. Also, the fields of psychology and interdisciplinary studies, which were previously gender-balanced, have become more female-intensive. Progress has been significantly slower, and significant imbalance continues to exist in engineering, mathematics physical sciences, and theology.

Additional data compiled by the National Center for Education Statistics also reveals that segregation of women earning degrees in various specialities within certain fields is still prevalent. For example, in 1979, within the fields of agriculture and natural resources, women were making progress by earning 27.1 percent of the undergraduate degrees in comparison to 4.2 percent in 1971. However, in four of the more popular specialties within the field of agriculture and natural resources, women earned less than 18 percent. Another example, in the field of public affairs and services, with specialties that include community services public administration, parks and recreation management, social work, law enforcement and corrections and international public service, there exists a major differential in the percentage of women earning specialty degrees within the field in comparison to the overall percentages of degrees earned. Although in 1979 53.2 percent of the field's undergraduate degrees were earned by women, 80 percent were in the specialized field of social work compared to only 30.4 percent in law enforcement/corrections.

Even though women are still choosing the female-intensive fields, there is movement toward certain male-intensive fields. There are an increasing number of women entering the fields of law and medicine. From 1970 to 1979 the percentage of women earning degrees in law increased from 5.4 to 28.5 and medicine from 8.4 to 23.0 (Grant and Eiden).

Other areas of study which show an overall increase of women are architecture and environmental design, biological science, business and management, communications, computer and information sciences, and engineering and physical sciences, although serious imbalances still exist.

2. Two Year Certificates and Degrees

At the community college and associate degree level, the segregation of women into particular fields and specialities occurs as demonstrated at four year institutions. As cited by A. D. Pepin and A. Q. Wells, in 1979 women earned 87.6 percent of the degrees and other formal awards in health services and paramedical technologies nationwide. However, they only earned 6.0 percent of the degrees and awards in medical and engineering technology. The field least marked by gender-segregation is data processing technologies where the percentages of women and men earning degrees across all of the major specialities are similar.

It is important to note, though, that even with the increased number of women who are choosing more traditionally male-oriented curricula and careers, the majority still earn degrees in lower paying, lower status, fields. In addition, at the masters and doctoral degree level, fewer women are earning degrees.

The fields in which women are earning degrees deserve scrutiny, since women's traditional segregation within higher education translates into labor market segregation and depressed wages (Treimann & Hartmann, 1981).

Issues: Participation by Women

Classroom climate, curriculum selection and the characteristics of women in postsecondary education all contribute to the number and kinds of degrees earned. Each is discussed separately below.

1. Classroom Climate

The overall institutional environment and classroom climate can have a major impact on women's academic and professional development by undermining their self-confidence and self-perception (Women's College Coalition).

Faculty behaviors help create the classroom climate. Ideally, college and university instruction provides a learning environment that weighs a student's performance only on the basis of merit. However, faculty and students are not immune to (1) preconceptions held by the larger society or (2) the everyday behaviors by which these perceptions of men and women are reinforced and expressed. As previously stated in the Commission's discussion paper entitled Quality and Equity Issues Linking Public Schools and Higher Education, "...within the (primary and secondary) education community there exist different expectations and achievement levels for adolescent men and women." Both men and women faculty can unknowingly express a limiting perspective of adequate and appropriate behavior, career directions and personal goals based on sex rather than individual merit.

Although faculty members may wish to treat all students fairly and equally, there are a broad range of subtle biases and inequities which many faculty and administrators may be unaware exist. This subtle behavior can have an overall damaging effect and can leave women students questioning their abilities and limiting their options in comparison to their male classmates. These "micro-inequities," as cited by Mary P. Rowe, Special Assistant to the President of M.I.T., in The Saturn Rings Phenomenon: Micro-Inequities and Unequal Opportunity in the American Economy, occur in the course of everyday exchanges--those in which individuals are either singled out or ignored because of sex, race or age. Each exchange taken singly may appear inconsequential but taken together will create a biased and unequal environment. The quality of the educational experience for women students is diminished along with their lack of desire to participate in classroom discussions; the need for the student to drop the class, or, in some instances, change majors; the undermining of a student's confidence; and the dampening of career aspirations (National Advisory Council on Women's Educational Programs). Sexual harassment is another form of negative classroom climate which affects a student's performance, choice of classes and retention rate. Although there has been legislative efforts to eliminate sexual harassment, such harassment still occurs.

The Project on the Status and Education of Women cited the following forms of subtle discriminatory behavior that may exist:

Condescension: The apparent refusal to take women seriously, as students or colleagues, communicated through posture, gesture, and tone of voice.

Role stereotyping: Expectation of behavior that conforms to the sex role stereotypes, such as passivity and deference in demeanor, and traditional course and career choices.

Sexist comments: Expressions of derogatory beliefs about women, such as the sentiments that women are "inferior," "lacking in originality," "not serious," "not intelligent" and "a distraction."

Hostility: Avoidance, expressions of annoyance, resentment, anger, and jokes and innuendoes at the expense of women.

Exclusion: Unintentional and intentional oversights denying women access to events (e.g., departmental functions where information needed for upward mobility may be informally exchanged).

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Denial of status and authority: The covert refusal to acknowledge a woman's position or her scope of authority (e.g., the bypassing of a woman staff member by subordinates going to her superiors).

Invisibility: The failure to recognize the presence or contributions of women (for example, in course content).

Double standards: Differential evaluation of behavior as a function of sex attribution (e.g., regarding a man's non-academic experience as "enriching" and that of a woman as indicating "lack of focus").

Postsecondary institutions are in a unique position to introduce changes which will increase sex equity by promoting and supporting traditional policy goals regarding access for women. They can create a climate for interaction, study and employment that will attract and retain the most able students and faculty. Institutions can address the problem of a "chilly classroom climate" for women students by (1) acknowledging the problem, (2) explaining its importance and effects to faculty, advisors, and administrators, (3) providing solutions to eliminate discriminatory behavior, and (4) providing balanced staff ratios at all levels of instruction, counselling and administration.

2. Curriculum Selection

As noted earlier in the problem statement, there is considerable imbalance between the sexes in degrees and awards conferred, in spite of significant gains by women since 1970. Curriculum selection is a key element in addressing these imbalances. The most serious imbalances exist in specific academic fields of study, and by degree level.

A. Fields of Study: As discussed earlier, fields of study traditionally pursued by women continue to be dominated by women. While women have made considerable gains in fields traditionally dominated by males, serious imbalances continue to exist, as shown in the following examples.

ACADEMIC FIELD	PERCENT OF DEGREES AWARDED (1979)		
	BACHELORS	MASTERS	DOCTORATE
Education	73.1	68.6	42.2
Fine and Applied Arts	62.5	53.8	35.1
Foreign Languages	75.9	69.5	53.8
Health Professions	82.0	71.0	36.8
Home Economics	95.1	91.2	67.6
Library Science	94.6	80.4	51.4
Engineering	8.3	6.1	3.4
Mathematics	41.6	34.8	16.7
Physical Sciences	22.5	18.1	11.3
Theology	25.7	32.0	4.6

B. Degree Level: Balance between the sexes has been virtually achieved at the bachelor degree level. However, in spite of phenomenal gains, women continue to lag behind men at the masters and doctorate levels:

PERCENT OF DEGREES EARNED (1970/1979)
UNITED STATES

	1971 WOMEN	1979 WOMEN
Bachelors	29.2	50.0
Masters	35.2	39.0
Doctorate	15.4	29.0

Targeted recruitment of women in academic areas where imbalance exists, effective counselling, and fair representation of women at all staff levels, and for all academic areas are elements that can affect curriculum selection. The Commission may wish to examine what postsecondary institutions are doing to encourage access to courses and degrees in higher paid, high status occupations where women are now underrepresented.

3. Characteristics of Current Women Students

Postsecondary education has traditionally been structured to meet the needs of younger, full-time students with few or no outside responsibilities. However, in recent years there has been an increasing trend for older adults--including many women whose education may have been interrupted or delayed by marriage, family responsibilities, and/or limited financial resources--to seek admissions to undergraduate and graduate study as full-time or part-time students.

The impact of these "nontraditional" students has been felt nationwide as colleges and universities report dramatic increases in the enrollment of adult students, especially when the pool of "traditional age" (18-24 year olds) students is decreasing. In addition, the Carnegie Council on Policy Studies on Higher Education predicts by the year 2000, 50 percent of all undergraduates will be over the age of 22.

The majority of these older students are women. Women have come to realize the need for further education to either advance in the job market or enter for the first time. Whether through economic necessity, self-fulfillment or career advancement, women have returned to or entered higher education in record numbers over the past ten years.

Within the context of defining the "nontraditional" woman student, there are diversified sub-populations which comprise this new adult student on campus. Many of these sub-populations experience multiple discrimination based not only on sex but race, age, marital status and income level.

These sub-populations include:

Minority Women - consisting of Black Americans, Hispanic Americans, Asian/Pacific Americans, and American Indians. In many minority households the working wife has been a critical factor between being poor or solvent. For the minority single parents who must work, access to a higher education can mean the difference between obtaining skilled or unskilled employment.

Displaced Homemakers - are defined as women, usually over the age of 35, who through divorce, separation, widowhood are former homemakers that have lost their main source of economic support. Displaced homemakers can lack job skills, education and work experience and, to be competitive in today's job market, often need to upgrade their skills and credentials. Additionally, they may need to be re-educated concerning career options.

Single Parents - In 1970, ten percent of the children in the United States were living in households headed by single parents. By 1980 that number had more than doubled. Almost 5 million households, in 1976, were headed by single parents, over 90 percent of whom were women. In many cases the female heads of household are below the poverty level. It is essential, as the sole source of support for their families, that these women have the opportunity to upgrade their skills and credentials to become self-sufficient. Single parents are the one sub-population whose need for child care is most prevalent. It is often difficult for single parents to balance family responsibilities, including cost, and returning to school to further their education.

Older Women - who return to higher education do so to prepare for employment, as well as for personal enrichment. In fact many have no option for they live on fixed incomes and must cope with inflation. Since these women, who are in their fifties and sixties (most widows), are products of a generation where women were generally not encouraged to pursue their education or their careers, they find themselves in low wage jobs such as sales clerks, service workers, etc. In addition, older women, to a fuller degree, can be subjected to the multiple discrimination based on employment and education through sex, age and race, if applicable.

Many obstacles can exist within the higher education community which have the potential to make it unnecessarily difficult for women re-entering postsecondary institutions. Some of the more common obstacles which re-entry women might encounter are (Project on the Status and Education of Women):

Credit transfer problems - The admission policies of postsecondary institutions can have a major impact when a re-entry woman wishes to transfer credit hours from attending previous educational institutions. Many institutions put a time restriction on the transferring of credits and the number of credits they allow students to transfer from other institutions.

Part-time students - Many women hold down full-time jobs while attending school part-time or can't afford to attend school full-time or are single parents who have family responsibilities. "Less than half-time students," usually those who take less than six credits, are penalized by exclusion from financial aid, internships, graduate study, etc. Further, part-time students find many times that they have a class scheduling conflict which can deny them access to a required class and may ultimately result in prolonging their graduation.

Need for support services - "Nontraditional" women need the same support services as the traditional 18-22 year old student such as career counseling, financial aid, refresher or remedial courses to assist them in reviewing the basic learning skills, health care assistance and the student employment office. However, many older women students are in class during these services' operating hours or they are attending school on an evening basis when these student services are not provided. In addition, the lack of child care services, especially for single parents, can be a major determining factor in whether or not a potential older woman student attends school at all.

All indications direct themselves toward an increase of older nontraditional students returning or entering college. Institutions should begin to recognize the unique make-up of the woman who is re-entering the higher education system and be aware of the continuing education and support service needs of these non-traditional students. The list above identifies some vital factors which assist these women to work to their full potential and allow them to fully participate in the academic and extracurricular activities on campus.

Summary: Participation by Women

This section provides supplemental material on women to the Mason-Miller Joint Task Force Report on Minorities, Women and Handicappers in Colleges and Universities. (This is provided to provoke further discussion surrounding the assumption that although women have been entering college over the past 10 years in record number, closer examination of specific areas and data suggest that most women stand on more tenuous educational ground than men.) These areas in question include the subtle behaviors and attitudes expressed that perpetuate inequities and obstacles for women within the postsecondary institution environment; the barriers which "nontraditional" women encounter with institution's policies and procedures when trying to pursue their college careers to improve their occupational standing; and the need for colleges and universities to understand their role in increasing the enrollment of women into non-traditional curriculum.

The Commission has adopted a policy guideline that states: "Equal access and maximum career options should be ensured regardless of sex, race, age, ethnicity or handicap." In deliberating on how to achieve this goal, the Commission may wish to consider the following questions:

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- How can institutions foster the best classroom climate for both women and men?

- What are Michigan's postsecondary educational institution's policies and procedures for "nontraditional" students? Are they adequate to address the access needs of "nontraditional" students? If not, what action needs to be taken?

- Is there an adequate data base for women including enrollment, attrition rates, curriculum selection and placement? If not, should one be generated? Who should be responsible for collection and analysis of the data? How should the data be used?

- Is the representation of women at all staff levels (administrative, faculty and staff) within Michigan's postsecondary education institutions adequate? If not, what steps should be taken?

- Are Michigan institutions providing adequate support in the area of career selection? If not, what additional steps could be taken, by whom?

HANDICAPPERS

Background

The definition of handicapper encompasses individuals with physical or mental impairments that limit performance or achievement to such an extent that the individuals can not participate successfully in society without elaborate and costly assistance.

Approximately 30 federal laws and the Michigan Elliott Larsen Civil Rights Act prohibit discrimination against handicappers. This prohibition extends to public and private postsecondary institutions.

Problem Statement

Quantitative data on handicappers in postsecondary institutions are not collected in Michigan or at the national level. Handicappers in the state report, however, that substantial barriers exist to participation in postsecondary education, in spite of the numerous legal prohibitions against discrimination cited in the foregoing section.

The work group on handicappers reported the following as barriers to participation by handicappers:

1. Lack of knowledge of services provided to handicappers
2. Inadequate support services
3. Lack of physical accessibility
4. Program accessibility
5. Lack of adequate data to monitor institutional compliance with federal and state requirements

Each is discussed separately in the following section on issues.

Issues Facing Handicappers

1. Information on Services

Prior to entering the postsecondary education system, it is important for handicappers to be aware of all the services provided by Michigan's postsecondary educational institutions and which ones can best assist them in providing for their full participation.

In 1978, the Department of Education, through the Higher Education Management Services office, compiled a directory entitled

Collegiate Services to Handicapper Students in Michigan's Higher Education Institutions which was the first effort in providing Michigan's handicappers with a "comprehensive view of higher education services available to meet specific needs." The directory has not been updated.

A directory, acting as a reference tool and starting point for those handicappers planning on attending college, also provides administrators with a basis of comparison with other colleges and universities to evaluate the accessibility of their own campus and programs. Further, a comprehensive directory would serve to assist not only students and college administrators but also secondary school and vocational rehabilitation counselors who advise students requiring special services; program planners who evaluate their own programs and formulate plans for future needs; and parents in assisting their children in formulating their educational plans.

The inclusion of such information as special service availability, auxiliary aids availability, building and living facilities accessibility, physical terrain description, resource people, number of handicappers attending to date and transportation services can assist handicappers in making the already difficult transition from secondary education to higher education and campus life less complicated.

2. Support Services

The support services provided by postsecondary education institutions could have a major impact concerning a handicapper's ability to function adequately within his or her college environment.

Some specific support services which are contributing factors to the autonomy and self-sufficiency of handicappers are special needs services such as volunteer readers and mechanical equipment to assist in academic endeavors, resource people to provide personal counseling and direction to appropriate resources to meet individual needs, personal assistant referral services to assist with daily personal activities (dressing, eating, etc.), transportation services for wheelchair and crutch users, and barrier-free buildings.

Financial assistance is another determining factor for handicappers especially when considering the tremendous cost of auxiliary services. The multitude of funding sources creates a basis for frustration for many handicappers. Until the fall of 1980, the Michigan Bureau of Rehabilitation equally shared its clients' unmet financial need for basic education costs with postsecondary financial aid offices. Clients were required to apply for financial aid at the postsecondary institution they planned on attending. The client/parent contribution, Basic Equal Opportunity Grant, the State Scholarship and Grants were subtracted by the financial aid officer from the basic cost of attending the institution. The remaining unmet need was divided equally between the Bureau of Rehabilitation and the institution. The institution provided its 50 percent share from the campus-based federal financial aid programs and the Bureau of Rehabilitation underwrote the balance.

Since 1980, the focus of the Bureau of Rehabilitation's funding assistance has been on complementing and supplementing the financial aid for basic education costs provided by financial aid offices who now have the primary responsibility to meet this need for clients or providing only auxiliary aid services. One reason for the policy change was the stipulation in Section 504 of the Rehabilitation Act of 1973 which states that "handicapper students should have the same access to federal financial aid resources as non-handicapper students." Another reason for the change in funding policy was the severe budget constraints felt by the Bureau. The Bureau, which in the past assisted with the basic education cost of tuition and room/board, now only provides financial assistance, dependent upon its existing budget and costs, for such items as personal attendants, special needs equipment, wheelchairs, hearing aids, etc.

As mandated by federal law, handicappers are expected to apply for financial assistance as a non-handicapper. Many handicapper groups state that, in theory, this law promotes equality, but in reality, limits access for they are fighting for the same dollars as all students which decreases their chances for assistance. An analysis of the impact of the policy change is not available. Also, those handicappers who are "less than half-time students," (taking less than six credits) are restricted from receiving financial assistance.

Transportation service is a factor which weighs heavily on a student's ability to attend the educational institution of his or her choice. Unless a handicapper has the ability to get from one end of a campus to another or from his or her residence to campus, why should a student attend that inaccessible institution? The problem arises when that inaccessible institution may be the only one providing the specific curriculum the handicapper has chosen or if the handicapper, by attending that specific inaccessible college, feels he or she can increase his or her opportunity for employment.

3. Physical Accessibility

Section 504 of the federal Rehabilitation Act of 1973 has been interpreted by the courts as handicapper nondiscrimination laws that require "meaningful equal opportunity." To accomplish meaningful equal opportunity for handicappers, regulators and the courts have required "reasonable accommodations"--that is, the provision or modifications of devices, services, facilities, practices, or procedures in order to match particular persons with particular programs, activities or to provide accessibility. As this pertains to Michigan's postsecondary institutions, federal law requires those institutions that receive federal funds must comply with Section 504 and provide "reasonable accommodations." There is a national ongoing dispute as to what "reasonable accommodations" really means. It has never been clarified. A problem then arises due to institutions' noncompliance with providing reasonable accommodations and the lack of enforcement on the federal level. If a class is taught in an inaccessible building, is it the institution's responsibility to change the class location to an accessible facility or should the student drop the class? These are questions that some institutions have not solved.

The following chart reveals the number of state-owned educational facilities at public four-year colleges and universities which are (1) completely accessible to handicappers; (2) buildings partially barrier free, i.e., access is the first floor only, but no provision of service for handicappers; (3) not accessible to handicappers (1980). No information is available on public community colleges or private institutions, since the state does not own buildings at those institutions.

SUMMARY OF PHYSICAL ACCESSIBILITY IN STATE OWNED BUILDINGS AT PUBLIC COLLEGES AND UNIVERSITIES IN MICHIGAN

College/University	(1) Completely Accessible	(2) Partially Accessible	(3) Inaccessible	Total
Central Michigan University	--	70	1	71
Eastern Michigan University	8	35	16	59
Ferris State College	10	36	6	52
Grand Valley State College	4	20	13	37
Lake Superior State College	3	7	25	35
Michigan State University	8	90	147	245
Michigan Technological Univ.	2	9	24	35
Northern Michigan University	4	37	7	48
Oakland University	4	34	24	62
Saginaw Valley State College	9	--	1	10
University of Michigan--				
Ann Arbor	65	99	70	234
Dearborn	6	3	9	18
Flint	2	4	5	11
Wayne State University	32	12	25	69
Western Michigan University	6	35	31	72
Total	163	491	404	1,058

Source: Facility Inventory - State of Michigan (1980), Department of Management and Budget

As revealed by the above chart, 15.4 percent of state-owned facilities are totally accessible, 46.9 percent are partially accessible, and 38.2 percent are inaccessible.

The questions must be asked

(1) Does current status of accessible buildings adversely affect the ability of handicappers to fully participate in postsecondary institutions?

(2) What is the obligation of the state to increase accessibility of educational institutions?

For colleges and universities, the major roadblock in providing support services and programs for handicappers is cost. With increasing costs and continuing budget cuts, institutions are faced with the need to provide these support services, but lack the necessary funds to implement them adequately. "The Higher Education and the Handicapped" resource center, a national clearing house on postsecondary education for handicappers, cites long-range planning as a key to successful implementation of support services and an accessible campus:

> Colleges and universities experienced in serving disabled students, report that the key to cost effectiveness is long-range planning. These institutions have a commitment to do so from the highest levels of administration.

To reiterate, support services are a basic need that many handicapper students require. The lack of special auxiliary aids, the high cost of a postsecondary education further exacerbated by special needs cost, inaccessible buildings, inadequate transportation services, biased counseling services and lack of faculty role models are major factors in determining a handicapper student's ability in obtaining a postsecondary education.

4. Program Accessibility:

Classroom climate and curriculum selection are important elements to program accessibility for handicappers. These issues are discussed in detail in the sections on women (pages 2 through 11).

5. Information on Participation by Handicappers

Slowly, through changing attitudes and federal and state legislation, the higher education community has become increasingly responsive to handicapper needs. However, there still exist many obstacles and barriers which prevent handicappers' full participation in college life. To better understand and meet the specialized needs of Michigan's diversified handicapper population within our higher education institutions, it may be necessary to establish a composite picture of what the population consists of to date and what it will consist of in the future. To date, no comprehensive profile of handicappers participating in Michigan's higher education system exists. As stated by the United States Department of Civil Rights, "A solid data base is necessary to study any group. Statistical information helps guide research, identify and better serve members of the group, and provide social indicators with which to measure the group's relative well-being within society over a period of time."

However, some groups have argued that retaining statistical information could result in discrimination against handicappers; therefore, adequate safeguards must be included to assure that the data are not used for discriminatory purposes.

Through the efforts of mainstreaming in Michigan's elementary and secondary school system and growth in handicappers' awareness level that these opportunities to continue their education do exist, postsecondary institutions will begin to recognize an increase in the number of handicappers.

In developing a student profile for handicappers, or any special population, types of data determined to be beneficial include: sex, age, race and ethnicity, type of handicap, special needs considerations, academic preparation and level of individual income. The wealth of knowledge provided by this kind of information would assist the state and colleges and universities in understanding how to best meet the needs of handicapper students, in particular, those students requiring special services such as interpretors for those with hearing characteristics; readers, kurzweil reading machines or enlargers for those with visual characteristics; or environmental access for wheelchair users.

The collection, compilation and establishment of a handicapper profile could assist colleges and universities to identify the status of handicappers, assess the need for support services, and plan programs to meet the needs of the handicapper population.

Summary: Participation by Handicappers

Michigan's handicappers, by obtaining a postsecondary education, have a means of enhancing their employability and economic security, become self-supporting and establish a way to develop a more independent lifestyle. Handicappers can succeed in postsecondary education institutions if barriers do not impede progress, if policies and procedures encourage participation and if necessary services are provided.

The work group reports that under existing situations for handicappers interested in the higher education system:

- Handicapper options have multiplied, but total accessibility has not been achieved.

- A broad range of choices for college attendance is available, but total accessibility is not complete.

In recognizing that state and federal laws require the "right to equal access" for handicappers, but considering cost constraints and decreased funding, the Commission might address the following questions.

1. Is it necessary for the State Board of Education to maintain a yearly updated collegiate services handbook for handicappers which will be distributed to all secondary education counselors? If so, who should bear the cost?

2. Is the current status of physical accessibility adequate? If not, should postsecondary education institutions establish capital outlay short and long-term plans to accommodate the budget constraints the institutions face?

3. Should a comprehensive statewide higher education data base be established for handicappers?

4. Should the state initiate innovative methods to increase the resources for handicapper citizens who wish to obtain a postsecondary education?

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ISSUES AND PROBLEMS REGARDING FINANCIAL ACCESS TO HIGHER EDUCATION IN MICHIGAN

STATE OF MICHIGAN

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THE ISSUES AND PROBLEMS REGARDING FINANCIAL ACCESS TO HIGHER EDUCATION IN MICHIGAN:

A DISCUSSION PAPER

Prepared For

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FINANCIAL ACCESS

Outline

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FINANCIAL ACCESS

I. BACKGROUND

At the present time postsecondary or higher education finance is driven by a complex mix of funding mechanisms and procedures. This eclectic arrangement includes the federal government, state governments, institutional revenues, the private community and, certainly not least, families and prospective students themselves.

Within the larger issue of higher education finance in general, the issues of student access and family affordability inevitably revolve around that portion of total educational costs that must be borne by students/families and the mix of financial aid options that are present to facilitate attendance by individuals whose families cannot meet these "consumer related" expenses.

Currently, most existing student financial aid programs are driven at least in part by the concept of demonstrated need for assistance. In other words, the family is first expected to contribute as it is able. Financial aid then comes into play to help make up the difference between what the family can reasonably contribute and the total consumer costs related to the particular program of study the student selects. This arrangement is designed to support the public policy goals of access and choice for all capable students.

Thus, the basic eligibility formula is as follows:

Consumer Related Costs
- Expected Family Contribution
= Need for Student Financial Assistance
(Unmet Need = Extent to Which There Are Inadequate Resources
to Fund the Need Documented)

In arriving at the consumer cost portion of the formula, consideration is given not only to tuition and fee expenses, but also to such related costs as room and board, transportation/travel, books and equipment, incidental costs, etc. Such consumer cost totals are developed annually by the schools themselves as well as other aid providers. Exhibit I identifies the relative level of such expenses at Michigan colleges and universities for single students pursuing fulltime resident undergraduate study for the current 1983-84 academic year as determined for the State of Michigan student assistance programs.

In arriving at the expected family contribution portion of the formula a "snapshot" of the family's current economic circumstances is taken and "developed" according to established analysis guidelines. These basic guidelines are established

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each year on a national basis to permit consistent treatment of families in similar sets of economic circumstances.

As might be expected, there is not total agreement regarding the adequacy of these family circumstance analysis guidelines. Such consensus is almost impossible anytime anything as intensely personal as family spending habits and priorities is subjected to a uniform national methodology of analysis. This system, does, however, attempt to (1) look at a broad range of factors impacting upon each family's situation and (2) provide a basis for consistent treatment of applicants on a nationwide basis. It should also be pointed out that the process involved does include opportunity for the introduction of unique family circumstance information and appeal of the formal results of the analysis itself. Exhibit II outlines the nature of the current analysis process involved in arriving at the calculated expected family contribution amount.

The need portion of the formula is simply the remainder found after the subtraction process is performed. Exhibit III provides some sample information regarding the result of this process for some "typical" family cases. This summary clearly indicates that the components of this formula are reviewed and updated each year and that the theoretical expectations being generated have been liberalized rather consistently in recent years.

To meet the need of families that apply, a "smorgasbord" of aid options has evolved over the last 25 years. There are a variety of providers in this mix--the federal government, state governments, institutions of higher education themselves, commercial lenders, other types of private organizations, etc. Exhibit IV identifies five different potential resource areas that families need to be familiar with and explore in a timely manner if they are indeed to "cover the waterfront" of possible options as they should.

As referenced in this paper, unmet need refers to the amount by which the current aid programs failed to meet the formal need documented by means of the formula identified. This concept is particularly important in interpreting Tables X and XI.

One other bit of information that may be useful as a backdrop to deliberations regarding financial access to higher education is reference to the reported rate at which Michigan students are actually pursuing such study at the present time.
Exhibit V summarizes the results of such a survey conducted with all Michigan high schools on an annual basis. While it makes no reference to the rate at which older adults might be opting to pursue further study, it does show that high school graduates at least are reportedly enrolling at an increasing

rate in spite of the obstacles involved (see page 4 of this report in particular in this regard).

While this overall enrollment data is collected by race and sex, the financial aid awarding process itself does not tend to collect or consider these factors. Thus, figures on actual student aid dollars distributed by race and/or sex is difficult to identify in any valid manner.

II. Basic Areas of Concern for Commission Policy Action

The paragraphs that follow identify four basic financial access concern areas--awareness, affordability, adequacy of dollars, and aid dollar mix. These areas, while certainly not mutually exclusive, are separated in this background presentation to facilitate Commission reference and focus. The data presented in any one area, in many cases, are applicable in others as well. The recommendations ultimately made by the Commission in these areas will inevitably be interrelated. It is hoped that the somewhat artificial separation and listing of concern areas pertaining to the topic of financial access at this juncture will facilitate identification and review of some key parameters that must ultimately be woven back together into the fabric of the final Commission report.

(AWARENESS BY STUDENTS OF FINANCIAL AID OPTIONS)

In reviewing the preceding background material one basic question that immediately comes to mind is the extent to which families and prospective students understand and feel comfortable with this fairly complex aid application process. If program availability is not understood and translated into consumer initiative, access is certainly lost.

While consumer perception data are scarce as they pertain to financial aid program familiarity, there are some bits of evidence that indicate that consumer awareness of financial aid options is not what it should be.

In 1977, for example, the Michigan Department of Education and the College Board undertook a study of the level of financial aid awareness of that year's high school senior class. A stratified sample of about 4,600 seniors participated in a survey effort in conjunction with this project. Table I shows that only about one-third of the students involved reported that in the spring of their senior year in high school they understood how to apply for several different major aid programs.

Table I - REPORTED POSTSECONDARY AID PROGRAM AWARENESS

Aid Program Area	Reported Level of Familiarity			
	Never Heard of the Program	Vaguely Familiar With Program	Know How to Apply	Total
Pell/BEOG	35%	30%	35%	100%
State Scholarships	30%	40%	30%	100%
State Tuition Grants	33%	43%	24%	100%
School Aid Programs	26%	44%	30%	100%

Projected and actual enrollment data also continue to show a direct relationship between postsecondary study and family socioeconomic status. This relationship has direct implications for the dollar adequacy issue discussed later, but there is also indication that differential levels of assistance program awareness may be part of the problem. Table II and the related citations that follow document this concern.

Table II - REPORTED POSTSECONDARY PLANS BY FAMILY INCOME RANGE

Parental Income Range	Reported Postsecondary Plans				
	Attend a 4-Year College	Attend a 2-Year College	Attend a Voc.-Tech. School	No Attend Plans	Total
$5,999	28%	24%	9%	39%	100%
$6,000 - 11,999	25%	21%	6%	48%	100%
12,000 - 19,999	33%	21%	7%	39%	100%
20,000 - 25,999	38%	21%	8%	33%	100%
26,000	47%	20%	4%	29%	100%

This continued relationship between family resource level and postsecondary aspirations/experience is consistent with the more recent national Hansen study findings (Chronicle of Higher Education, November 17, 1982, p. 13) and earlier research literature in the field (see for example, Jensen's article entitled, "Student Financial Aid and Persistence in College," in the 1981 Journal of Higher Education, Vol. 52, No. 3; and Kingston's article entitled, "The Credential Elite" in the 1981 Teachers College Record, Vol. 82, No. 4).

Data identified by the "Source of Funds" Subcommittee of the National Commission on Student Financial Assistance also support this contention. The Commission's Draft Access and Choice Report indicates for example that:

> "In the mid-1960s, a study found that among students with high ability (top 40 percent in achievement), those from the top quarter income distribution had a 90 percent chance of going to college while those from the bottom quarter of the income distribution had only a 42 percent chance. A recent survey indicated that 52 percent of high ability, low income students attended college compared to 87 percent of those with high ability and high income. Clearly, we have made progress. But equally clear, lack of financial resources continues to prevent many high ability students from developing their talents through attendance at postsecondary institutions. . . The studies which the Commission has conducted show clearly that the amount of federal assistance has resulted in significant progress toward the goal of providing access to postsecondary education for all students, but that more remains to be done. . .
>
> "The subcommittee also found that in analyzing the impact of student aid on access and choice, it is important to examine existing information barriers, particularly for low income students. . .

Mr. Dan Hall, Dean of Admissions and Aid at the University of Chicago, recommended at one of the Commission Subcommittee hearings in Chicago that:

> "A national goal of conveying financial aid information to students a year earlier for the next several years should be established so that by 1990 every student starting junior high school will be focused toward the idea of preparing for education or training after high school.
>
> Special attention should be made to get this message across to low income and minority students."

Reports from the Michigan Department of Education's Project Outreach also indicate that students themselves from around the state are identifying lack of financial aid program awareness as one of their key higher education concerns (see Project Outreach 1981-82 and 1982-83 Opinions and Concerns of High School Students Reports). These sessions draw together literally thousands of secondary school student leaders in a series of regional meetings each year and provide them with an opportunity to reflect upon perceived educational problems and make recommendations accordingly.

At the present time, a variety of procedures are used to help acquaint prospective students and their families with potential educational finance options. These activities include:

1. Conducting evening sessions with families regarding an overview of financial aid options and the actual completion of application materials.

2. Participation in available college night, college fair, jobs fair programs, etc.

3. Promotion of aid information via the print and electronic media-PSA's, call in programs, etc.

4. Use of other existing public awareness vehicles such as organization newsletters, counselor training, cable TV, MOIS, etc.

5. Variety of publications and announcements to prospective students from schools themselves.

While existing outreach efforts are extensive, they suffer continually from limitations of personnel, time and budget at both the institutional and state levels.

It should also be noted in this regard that there are a variety of commercial entrepreneurs who, for a fee (usually from $50-100 per applicant), will provide a summary of public and private resource options that are available to prospective students given their specific family circumstances. The sophistication and accuracy of the data bases from which such commercial concerns operate can vary tremendously.

Given the multiplicity of such organizations that exist and the range of capabilities involved, it is often difficult if not impossible for consumers to identify the potential value of such services.

Questions to consider:

Given the relatively low level of aid program awareness that appears to be present and the continued link being found between socioeconomic status and postsecondary education enrollment, the Commission may wish to address the following questions:

- Should the existing aid delivery system be modified to make it more understandable for parents and students? If so, how?

- Should existing outreach efforts be expanded? How can this best be accomplished? How should such expanded efforts be funded?

- Should the state review commercial aid information providers?

(AFFORDABILITY OF STUDENT EXPENSES)

Yet a second basic policy area that comes to mind as one looks at the issue of financial access to higher education in the State of Michigan is the matter of cost.

What mix of general higher education support and consumer-based student aid is needed to help ensure that the magnitude of student consumer costs by themselves do not drive people out of the system without considering the possibility of further study? In other words, are prospective students "self-selecting" themselves out of higher education simply because of the level of consumer-related cost involved? Preceived access, not theoretical access, is the primary basis upon which consumer decisions are made.

While there is no definitive evidence regarding the impact that costs by themselves are having on perceived educational access and choice, there is some indication that costs negatively influence educational pursuit.

Group Attitudes Corp., for example, has recently released the results of a nationwide study which found that roughly 80% of a sample studied felt that college costs were pricing higher education out of the reach of an ever-greater proportion of the American citizens (Education Daily, October 4, 1983). In reviewing this survey data pertaining to public perception of higher education costs, the authors conclude that:

> "Together these findings clearly show that college and university costs today are such that most people do not find them affordable, and see worse times ahead." (American Attitudes Toward Higher Education, 1983, Group Attitudes Corp., p. 29)

Another research study (Jensen, "Student Financial Aid and Persistence in College," Journal of Higher Education, 1981, Vol. 52, No. 3) conducted on this topic at Washington State University concluded:

> ". . . we found that the denial of financial assistance to this group resulted in a slight decrease in persistence when independent variables were statistically controlled."

Beyond this general conclusion relative to the educational persistence of applicants not actually qualifying for financial aid, the study further observes that:

> "While these standardized techniques do provide a quantifiable estimation of the financial needs of the student, potentially influential subjective factors are often not considered. Parents vary greatly in their willingness to support their children while attending college. . .we have no measure of the true extent of the perceived financial need."

While this study focused upon individuals who at least had persisted to the point of initial college enrollment and aid application, aid denial at this level also did produce differential persistence results evidently due to the consumer-related costs being experienced.

This perceived cost "squeeze" is further editoralized in (1) the October 13, 1983 Wall Street Journal article entitled "Many Students Learn About Financial Problems As Costs Soar and Financial Aid Levels Off" and (2) The August 1983 Washington Monthly article entitled "Highbrow Robbery: The Colleges Call It Tuition, We Call It Plunder."

The National Commission on Student Financial Assistance Subcommittee on Source of Funds in its Draft Access and Choice Report also supported this concern by reporting one of its studies found that:

> "Tuition as a share of discretionary income has increased drastically. Tuition is estimated to have risen from under one-third to over two-thirds of discretionary income in the last decade for the median family income. . While the aggregate amount of student aid appears to have increased substantially from 1972 to 1982, the amount of the average award has not increased as fast as the tuition paid by each student. Consequently, inflation has wiped out almost all of the dollar value of student aid awarded and left students, particularly those without aid, with increasing difficulties in paying for college."

The evidence in this area is far from consistent, however, as other studies (see for example the Erdmann article entitled "An Examination of Factors Influencing Student Choice in the College Selection Process" in the Summer, 1983 issue of the Journal of College Admissions) tend to downplay cost consideration in this decision making process.

If, however, cost concerns do indeed exist in the minds of a good share of the public, Michigan's higher education system is especially jeopardized given its higher-than-national-average consumer costs.

Tables III-VI identify some key Michigan higher education cost considerations.

Table III

COMPARISON OF MICHIGAN AND AVERAGE NATIONAL EDUCATIONAL TUITION AND FEE EXPENSES FOR FULLTIME UNDERGRADUATE STUDY

	1983-84 Dist./St.Resident National Average*	1983-84 Dist./St. Resident Michigan Average**	Percent Difference
Public 2-year	$ 621	$ 744	Michigan 20% higher
Public 4-year	1,105	1,572	Michigan 42% higher
Private 4-year coll. & univ.	4,627	4,835	Michigan 5% higher

*College Scholarship Service College Cost Book
**Michigan T & F Study (Exhibit VII)

Table IV

REPORTED STUDENT AWARENESS OF COST*

School Type	Percent Respondents Estimating Total College Costs Under State Average
Public two-year	80%
Public four-year	35%
Private colleges and universities	44%

*1977 College Board/MDE Study

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Table V
CHANGE IN MICHIGAN EDUCATIONAL COSTS OVER TIME*

Category	Percentage Change of Average Between 1978-79 and 1983-84
Detroit Consumer Price Index (CPI)	58%
Michigan Per Capita Income	41%
Community College (CC)-- In Dist. Tuition and Fees (T & F)	60%
CC--Out of Dist. T & F	50%
Pub. 4-yr. Res. T & F	82%
Priv. Coll/U. T & F	73%

*Michigan T & F Study (Exhibit VII)

Table VI
NATIONAL PROJECTED COST INCREASES BETWEEN 1983 AND 1984*

Area	Projected Change and Data Source
CPI	4-5% national av. increase - CBO
T & F	8-10% national av. increase - Minter Assoc.

*7/1983 ACE Policy Brief entitled College Costs: Recent Trends, Likely Future.

This information tends to indicate that (1) costs may indeed deter participation regardless of the mix of student aid resources present, (2) Michigan higher education consumer related costs tend to be higher than the national average, and (3) Michigan/national consumer related educational costs tend to generally be rising faster than other broad economic measures such as the CPI.

Consumer related higher education costs, at least in the public sector, are also inevitably tied directly to the level of general fiscal support found within a state for its postsecondary education enterprise. Table VII provides some comparative measures regarding Michigan's overall level of support for higher education.

Table VII

STATE RANKINGS ON SEVEN SCALES OF OVERALL HIGHER EDUCATION (INCLUDING STATE STUDENT AID) SUPPORT*

	Measures Compared				Measures Compared	Measures Compared	
	1983-84 Hi. Ed. Approp.	Approp. Per Capita	Approp. Per $1,000 Pers. Inc.	2-year Change	10-year Change	2-Year Change Less Inflation (Higher Education	10-Year Change Less Inflation Appropriation)
Michigan Comparative Ranking With All Other States	7th	34th	36th	44th	50th	45th	50th

*M. M. Chambers Data - 10/25/83 Chronicle of Higher Education, p. 15. (Note: Capital outlay funds not included.)

While each state's overall level of higher education support and relative mix between general higher education finance and direct student aid support is unique, it should be noted that (1) failure to maintain historic levels of general higher education support typically leads to balancing of institutional budgets with enlarged tuition and fee assessments and (2) shifts away from general higher education finance to increased reliance upon direct student aid may precipitate consumer cost levels in a state that by themselves impede perceived consumer access to and choice within higher education options.

It can be noted from the national Group Attitudes Corp. Survey cited earlier that the majority of the respondents favored increases in both (1) the level of general state/federal higher education funding and (2) the funding levels to direct student aid programs to help keep perceived cost problems under control.

Gaining a better perspective on the potential impact of existing or proposed consumer higher education costs is at best a difficult process. Consumer surveys and interviews, such as those reported above, are typically limited by the rigor of the sample and the fact that casual reaction, not actual behavior, is being measured. Theoretical prediction formulas, on the other hand, are inevitably tied to the assumptions upon which they are founded. While all such systematic approaches to the formal study of higher education consumer cost impacts have their limitations, they may still be useful tools to help provide a better basis for policy action.

Questions to consider:

Given the potential impact that consumer cost levels by themselves may have on access to higher education, the Commission may wish to address the following questions:

- Should there be changes in the mix of general institutional vs. direct student aid support provided by the State of Michigan for its higher education enterprise? If so, what types of changes are viable and how should they be funded?
- What can be done to stabilize tuition rates?
- Should options be explored to institute formal consumer impact studies/formulas in Michigan to help analyze the effects of pricing policies in higher education?

(ADEQUACY OF STUDENT FINANCIAL AID FUNDING)

Another major issue that should be considered with regard to the overall topic of financial access to higher education is the question of dollar adequacy. Do we presently have enough student aid funds to at least ensure access and choice for all who formally apply and document the lack of resources to pay all of the consumer-related costs involved?

Tables VIII-XI indicate that there is very definitely a dollar deficiency with regard to the funding levels of existing undergraduate student aid options.

Table VIII
NUMBER OF NEEDY UNDERGRADUATE STUDENTS REPORTED IN COMPARISON WITH OVERALL FULLTIME EQUATED (FTE) ENROLLMENT

School Type	FTE Undergraduates 1978-79 Academic Year	1980-81 Academic Year	% Change	Number of Needy* Undergraduates 1978-79 Academic Year	1980-81 Academic Year	% Change
Public 2-year	94,841	105,663	+ 11%	30,207	52,190	+ 73%
Public 4-year	157,490	167,936	+ 7%	67,127	82,840	+ 23%
Private colleges & univ.	42,688	45,235	+ 6%	24,378	29,156	+ 20%
Total	295,019	318,834	+ 8%	121,712	164,186	+ 34%

*By survey definition refers to students who actually apply and demonstrate formal "need" for assistance as defined in the background portion of this paper.

Table IX
AGGREGATE AMOUNT OF UNDERGRADUATE FINANCIAL AID DOLLARS REPORTED FROM ALL SOURCES IN MICHIGAN

School Type	Total Undergraduate Aid Dollars Reported 1978-79	1980-81	% Change
Public two-year	$32,736,826	$53,507,317	+ 63%
Public four-year	157,644,434	295,560,189	+ 87%
Private colleges and universities	66,751,210	116,152,368	+ 74%
Total	$257,132,470	$465,219,874	+ 81%

Table X
AGGREGATE UNDERGRADUATE UNMET NEED REPORTED IN MICHIGAN

	Total Amount of Undergraduate Unmet Need Reported		
School type	1978-79	1980-81	% Change
Public two-year	$5,117,567	$19,022,030	+271%
Public four-year	12,916,670	25,628,251	+ 98%
Private colleges and universities	16,801,361	28,076,287	+ 67%
Total	$34,835,598	$72,726,568	+109%

Table XI
DISTRIBUTION OF REPORTED UNMET NEED

	Students With Full Need Met 100%		Average Unmet Need	
Type of School	1978-79	1980-81	1978-79	1980-81
Public two-year	61%	31%	$169	$364
Public four-year	72%	58%	192	309
Private colleges and universities	44%	26%	689	963
Total	64%	44%	$286	$443

Tables VIII-XI are compiled from the Michigan Department of Education's undergraduate Student Aid Survey that is jointly sponsored every other year by the Department's Student Financial Assistance Service Area and the Michigan Student Financial Aid Association (MSFAA).* These data tend to show that reported "unmet need" is outstripping the growth in undergraduate dollars available. The last full Undergraduate Student Aid Survey Report is further provided as background material for those interested in additional data in this regard. (Exhibit VI).

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*This data does not include nondegree vocational schools. While no Michigan data are available in this area, a national study done for the National Commission on Student Financial Aid (see Chronicle of Higher Education, September 14, 1983) tends to indicate that their students' level of "unmet need" is generally at least as high as that found within the collegiate sector.

While the aggregate size of this undergraduate aid deficit may seem extremely high, it must be remembered that (1) the consumer-related educational costs involved include both "direct" (tuition, books, fees) as well as "indirect" (room, board, transportation) expenses and (2) the figures involved include both single and married undergraduate applicant needs. Older students with families often have total expense budgets that run considerably higher than those encountered by single students. This factor undoubtedly helps account for the especially big increase in unmet need reported by community colleges in Table X as those institutions tend to serve a large percentage of the older students enrolled in undergraduate education.

These factors, along with ever-increasing tuition and fee charges, a changing mix of financial circumstances among aid applicants given the state's economic conditions, and changes in the need calculation process itself, all contribute to the unmet need figures being reported by Michigan colleges and universities.

The 1982-83 version of this Michigan Department of Education/Student Financial Aid Association survey is now in the field and it is hoped that the results will be available by this spring.

It must also be remembered in reviewing this data that the figures pertain just to those who have actually persisted at least to the point of formal aid application. The potential needs of those yet outside of the higher education system are not reflected in the figures provided.

Similar concern about the overall adequacy of student aid dollars is being expressed as well on the national level by such groups as the National Commission on Student Financial Assistance and the College Board.

The National Commission's Subcommittee on "Source of Funds," in its Access and Choice Report for example, notes that federal student aid dollars available have not, of late, kept pace with educational costs and inflation and recommends increased funding in both the Pell and campus-based programs.

The recent College Board paper entitled, Trends in Student Aid: 1963 to 1983 similarly notes that:

> "The early 1980s have seen a major change in the relationship of costs, income, and aid. Adjusted for inflation, costs have increased, but income and aid per FTE student have not. Thus, in contrast to what can be said generally about the last two decades, college has become relatively more difficult for families to afford in the 1980s."

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The January 25, 1984, Chronicle of Higher Education, summary of this College Board Report paraphrases one of the main conclusions as follows:

> "Many families are having more difficulty paying for a college education. The growth of student-aid funds has stopped, college costs are continuing to rise, and family incomes have failed to keep pace."

This College Board Report further points out that when "less traditional" types of aid such as Social Security Educational Benefits, Veterans Benefits, etc., are considered, aggregate student dollars available have actually declined in recent years.

These dollar shortfalls have serious implications for the access of Michigan citizens to postsecondary study.

On a related front, it has become apparent of late that the public and private sectors of higher education are becoming increasingly strident in their competition for the student resource dollars that do exist. Dr. Clifton Wharton has recently observed in this regard that:

> "On one hand (there) is the relationship both sectors publicly profess--that the private colleges and universities of New York State complement but do not replicate the public institutions and visa versa. . . On the other hand (there) is a relationship that may not be publicly acknowledged, but is obvious nevertheless: Increasingly the two sectors see themselves in competition for limited tax dollars. . . .
>
> "For either sector to seek gains at the other's expense will produce only the strident, politically useless clamor of a family quarrel. A public/private coalition working for all students and all institutions can speak with a forceful and resounding voice."

This article ("Enrollments and Student Aid: The New Public-Private Clash?") appearing in the October, 1982, issue of The Journal of College Admissions provides one perspective on this issue.

Questions to consider:

Given the additional dollars needed to fully fund the existing student aid delivery system, the Commission may wish to address the following questions:

- As an alternative, should the financial aid allocation system be changed to decrease the dollars needed for full funding? If so, how?

- Should increased state/federal funds be targeted toward (a) existing need-based student aid programs, (b) new direct student aid delivery vehicles, and/or (c) direct institutional support to help reduce the pressure on consumer-related higher education expenses?

- What are the potential sources of government funds that should be targeted in this direction?

- How should available student aid funds be distributed between the public and private sectors of higher education?

- How should available student aid funds be distributed between "need based" and "non-need based" revenues?

(AID DOLLAR MIX)

Yet, a fourth issue relating to financial access which should be touched upon is the desired mix of types of student aid dollars available. Are we, as a matter of policy, beginning to rely too heavily on self-help funding particularly in the form of student loans?

Table XII summarizes the changes that have taken place in the mix of undergraduate student aid dollars in Michigan in recent years.

Table XII
REPORTED UNDERGRADUATE STUDENT AID DOLLARS BY TYPE OF AWARD OVER TIME*

	Total Dollars by Category				Total Dollars by Category			
Academic Year	Scholarship/Grant Amount	Scholarship/Grant Percent	Loan Amount	Loan Percent	Work Amount	Work Percent	Total Amount	Total Percent
1978-79	$131,640,531	51%	$71,023,435	28%	$54,468,504	21%	$257,132,470	100%
1980-81	192,881,842	41%	186,150,793	40%	86,187,239	19%	465,219,874	100%
Percentage Change in Amt.	+46%		+162%		+58%		+81%	

*Data from Michigan Department of Education Undergraduate Student Aid Survey (See Exhibit VI).

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The National Commission on Student Financial Assistance also sponsored a study which showed that for the 1981-82 academic year some 20-25% of the typical dependent student college expense budget of "needy" students is now covered by educational loans.* While this Commission is also quick to point out that this increasing reliance on student loans has not, as yet, seemed to result in an increasing rate of default,** one can only speculate as to (1) what the potential "elasticity" in educational debt obligation really is, (2) how such debt loads impact on perceived access to higher education, and (3) what extent extensive debt inappropriately mortgages the student's future?

The Trends in Student Aid: 1963 to 1983 College Board study cited earlier points out in this regard that:

> "There have been major shifts over time in the overall proportions of aid awarded in the form of grants and loans. . . Average grant aid per FTE student is an estimated 53 percent lower in 1983-84 than in 1975-76. Over the same period the average loan per FTE student grew by 123 percent."

Congressman Ford, for example, has seriously questioned the appropriateness of an educational debt load of such a magnitude.

Question to consider:

Given this movement toward loans in student financial aid, the Commission may wish to address the following question:

- Should the current "balance" between grant, loan and work assistance be modified? If so, how and by whom?

III. SUMMARY

This background paper attempts to outline a number of financial access related issues for Commission deliberation.

It is hoped that the policy questions formulated will help the Commission to focus its discussion in this area.

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*Chronicle of Higher Education, September 14, 1983.

*Chronicle of Higher Education, November 16, 1983, p. 20.

ELEMENTS OF QUALITY ASSOCIATED WITH BACHELOR AND ASSOCIATE DEGREE PROGRAMS IN MICHIGAN

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ELEMENTS OF QUALITY ASSOCIATED WITH BACHELOR AND ASSOCIATE DEGREE PROGRAMS IN MICHIGAN

Prepared For
Governor's Commission on the Future of Higher Education
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PREFACE

Undergraduate quality, as discussed in this paper, encompasses public two-year colleges, public four-year colleges and universities and private institutions. Although the paper is limited in focus to undergraduate education, it is important to recognize that the graduate and undergraduate levels of higher learning are interrelated where quality is concerned. Whenever constraints on graduate programs limit the calibre or quantity of faculty and equipment, the adequacy of resources available for undergraduate programs is concomitantly affected.

The content of this paper is derived from three sources: First, the Commission's determination that quality education should enable graduates to assume productive employment, to lead satisfying lives and to become effective citizens and leaders; second, the Commission's expectation that Michigan's higher education institutions will increase academic excellence and program quality in pursuit of the aforementioned outcomes; and third, growing public sentiments that the enhancement of educational quality is a top priority for Michigan in the 1980s.

The paper's content reflects the advice of a group of faculty and administrative advisors representative of all sectors of higher education in Michigan. A list of institutional representatives is included as Appendix A.

Section I of the paper discusses public perceptions of quality and variables used to measure educational quality — graduate and undergraduate. Section II discusses five issues which the general public, faculty, employers and students believe can have a troubling effect on the quality of Michigan's undergraduate educational system in the short-term future. Section III of the paper summarizes its contents and discusses factors constraining institutions in their pursuit of quality.

SECTION I:
PUBLIC PERCEPTIONS AND MEASURES OF QUALITY

Educational Quality: Public Issue of the 1980s

During the course of the last few years, public attitudes about education have shifted from a strong feeling of confidence in educational excellence to a belief that academic quality may be in jeopardy. Public perceptions of mediocrity in education were nationally articulated in A Nation at Risk, a report dealing primarily with a decline in the quality of primary and secondary education in the United States. In addition to documenting a diminution in the quality of early education, the National Commission on Excellence in Education, source of the report, collected voluminous ancillary data suggesting that educational inadequacies might be characteristic of postsecondary education, as well.

One of the attributes of any stable society is the fact that the public perceives its formal institutions to be strong and relevant. Public confidence can be shaken when established institutions fail to perform their socially-defined functions or when society must reevaluate its expectations in light of changes in the socio-economic landscape. The causal relationship between institutional performance and public confidence is especially pertinent to higher education in 1984. Events of the last decade have forced the public to realign its values and its expectations. This realignment has led to questions about how higher education should perform its functions during the sunset years of the twentieth century.

In 1981, George Kuh published an article entitled "Indices of Quality in the Undergraduate Experience" which summarized how public concerns have served as themes for reform in higher education (7)

> "At various times during the past 20 years, different themes have influenced policies and practices in institutions of higher education. Excellence in the early 1960's, access in the late 1960's, and egalitarianism in the 1970's were issues that challenged administrators and faculty alike. One of the salient themes of the 1980's promises to be quality (p. 2)."

As employers report a less literate cohort of entry level workers, as many college graduates fail in their attempts to exchange college degrees for satisfying jobs, as educational costs become incompatible with family income levels and as elected officials satisfy the demand for human services by reducing educational budgets, the public needs reassurance that the quality of advanced learning is not being eroded.

In its search for reassurance, the public is asking higher education to account for its expenditure of public funds. Consequently, citizens expect higher education to evaluate its performance in terms of "quality"—an historical attribute of Michigan's educational system and a standard uniquely suited to publicly-formulated judgements

Definitions of Quality: Elusive and Subjective

Attempts to define quality elude consensus; individuals perceive quality differently and, hence, associate it with different attributes. This inability to delineate agreed-upon elements of quality is further complicated when discussing undergraduate education — an enterprise characterized by a heterogeneity of missions and a lack of concrete agreement about desired outcomes.

Michigan's 100 institutions of higher education form a statewide system characterized, first and foremost, as "heterogeneous." Schools appeal to different types of students from different geographical areas and offer different constellations of programs. Institutions specialize their missions in order to maximize their unique strengths. Institutions vary depending on their perceived obligations to surrounding communities and specific student groups. This diversity of roles and missions among undergraduate programs precludes development of a single statement about the quality of all institutions.

Given the multiplicity of institutional activities and stated missions, definitions of quality are most often derived from subjective judgements and perceptions. To quote Harold Eranson (5):

> "...(in judging quality) there is no substitute for individual judgment the power of informed and thoughtful minds, observation drawing from experience; no substitute for that most uncommon quality that, by curious distortion, we call common sense (p. 8)."

Judgments about the quality of undergraduate education are made every day by students deciding which college to attend, by state budget officers deciding how to allocate resources among various institutions and by individual institutions deciding on admissions policies and degree requirements (2). People committed to the state's future and knowledgeable about the functions performed by higher education can attach reliable meaning to the concept of educational quality. Such people usually recognize quality when it is present; they also keenly sense its absence.

This Commission adopted a definition of quality based on the outcomes of higher education. In November 1983, Commissioners agreed that institutions should contribute to the social and economic well-being of the state by "preparing individuals to assume productive employment, to lead satisfying lives and to be effective citizens and leaders." This definition of quality, encompassing three primary functions of advanced learning, devolved from individual judgments, experience and observation. Unlike standards of quality focused on input (the abilities of entering students) or "throughput" (the way students interact with their peers and faculty), the Commission standards focus on the output or products of higher education.

What remains is to understand how such outcomes may be assessed, i.e., to what degree employability, life satisfaction and citizenship can be documented as outcomes of quality undergraduate education. The "measurability" of quality can be better understood by a discussion of variables associated with quality and related measurement techniques.

Measures of Quality

A review of the literature on educational quality reveals that previous research has deemphasized "holistic" measures, i.e., those which combine objective and subjective variables to gauge quality in a multidimensional manner. The infrequent use of holistic measures is believed related to the cost and complexity of research requiring a combination of tabulation, interviews, observation and longitudinal follow-up.

Light can be shed on holistic measures by discussing the "value-added" construct. This technique identifies what attributes the educational experience "adds to" students during the period of their matriculation. Value-added research documents student characteristics upon admission, as well as changes in the student associated with college attendance. Information regarding the institutional environment and institutional resources is factored into the design in order to judge the nature of the college or university's impact on student development. Changes revealed at graduation, no matter how small or how large, reflect the interaction between the characteristics of entering freshmen and institutional interventions. As a model, the value-added concept points out the shortcomings of single dimension measures which focus on quantitative or qualitative variables, but never on both.

To date, assessments of higher education quality have incorporated variables which fall into two discrete categories. Table I represents the variables of both types which have been operationalized in previous quality evaluations (4,7,8).

Quantitative Variables

- Research funds available
- Expenditures per student
- Total institutional budget
- Total institutional endowments
- Tuition levels
- Institutional size
- Size of departments
- Tabulation of instructional activities (seminars, directed readings, etc.)
- Student aptitude or achievement scores
- Proportion of students continuing to graduate/professional school
- Ratio of students to faculty
- Years of faculty teaching experience
- Faculty awards and offices
- Proportion of full professors on faculty
- Scholarly and research productivity of faculty
- Faculty salaries and background
- Size of library collections
- Ratios of students/faculty to library volumes
- Salaries of library staff

Qualitative Variables

- Public Service
- Reputational prestige of institution
- Adequacy of laboratories, office space, computer capabilities, seminar rooms, etc.
- National influence of institution
- Student development achieved
- Enrollment data for students from time of entry to termination of study
- Records of student participation in extracurricular activities
- Student perceptions of teaching quality
- Student perceptions of institution's concern for students
- Freshmen admissions selectivity
- Accomplishments of recent graudates
- Alumni ratings of experience
- Morale and satisfaction reports: students and faculty
- Perceived degree to which scholarly excitement is nurtured by student-faculty interactions
- Judgements about academic offerings and procedures
- Perceived degree of departmental effort toward the career development of junior faculty
- Faculty mobility
- Records of library use (access to library facilities)
- Adequacy of library holdings and degree to which they are up-to-date

Lacking holistic research findings regarding undergraduate education, the Commission is encouraged to focus its attention on those quality questions currently surrounded by controversy. Faculty, students and the public agree on five issues which could imminently affect undergraduate quality. The next section of this paper discusses the relationship between quality education and: (1) student competencies; (2) the goal of a liberal education; (3) the needs of special and non-traditional students; (4) faculty morale; and (5) library resources.

SECTION TWO:

ISSUES AFFECTING QUALITY

Undergraduate education involves a complex relationship between faculty, academic support staff, students, instructional methods, subject matter, the institutional environment, accreditation policies, institutional expectations, public values and learning resources. This paper will limit its discussion to five issues perceived as potential threats to educational quality in 1984. Quality will be discussed primarily in terms of the interplay between students, faculty, subject matter and information resources.

ISSUE ONE: SHOULD MINIMAL STUDENT COMPETENCY LEVELS BE IDENTIFIED AND MEASURED?

Human inputs such as the tested abilities of students are frequently figured into judgments about educational quality. At the point of college admission, student abilities are often represented by scores on standardized entrance examinations. Although standardized tests are imperfect measures of the potentialities of all students, descending scores indicate that today's traditional-age college enrollees may pose a challenge to previous quality ideals. At minimum, postsecondary and secondary school leaders have been alerted by declining scores as to the need for communication between the two educational sectors.

The decline in scores has implications for the way undergraduate education is structured — its methods, its goals and its objectives. Scores have been accompanied by an increased need for colleges and universities to offer remedial and developmental programs in basic areas: writing, reading, calculation and study methods.

A national survey of 1,269 colleges and universities was conducted in the early 1980s in order to document institutional perceptions of the preparation of entering freshmen, the extent to which students needed help in basic skills and the ways in which institutions responded to the needs of unprepared students. The study reports the following summary findings (9):

- 85% of the responding institutions perceived poor academic preparation of incoming freshmen to be a problem.

- A substantial percentage of entering freshmen were viewed as requiring assistance in the basic skill areas — 28% in reading, 31% in basic writing and 32% in basic mathematics. (The overwhelming majority of institutions offered courses in the basic skills areas).
- While tests were the most common method for placement into basic skills courses, there was little agreement on specific tests. The most common method for placement into basic writing and mathematics courses was through locally developed tests.
- Although institutions used tests to assess skill levels of students and to place them in courses, in the vast majority of institutions, decisions concerning the exit from basic skills courses were left to the academic judgement of individual faculty members.

Remediation is, thus, a necessity on college and university campuses. As a consequence, financial and human resources are being redirected in support of the idea that quality education should address the needs of all admitted students, regardless of the student's aptitude, achievements or apparent talents.

Using the comprehensive standards of holistic measures, undergraduate education can validate its effectiveness if student skills are tested at the point of entry and upon completion of coursework in basic areas. Although all Michigan students seeking financial aid are required to undergo standardized testing, many students — especially community college applicants — begin college with no standardized indicator of their academic potential. Moreover, few colleges and universities assess the degree to which students master desired learnings prior to graduation.

In all cases, but especially for students who do not take standardized entrance examinations, basic competency tests administered at the point of entry would help identify remedial needs in a timely manner. Entrance testing, through admission examinations and/or competency measures, allows institutions to target resources in order to retain students with diverse abilities.

Just as entrance tests can identify weaknesses and facilitate retention, exit tests can verify the acquisition of knowledge and skills. More and more, employers and the faculty of graduate and professional schools are questioning the degree to which an undergraduate diploma predicts competence. Having doubts about the validity of a college degree, these "clients" of undergraduate education increasingly assert the need for a battery of "exit tests," to be administered at the completion of basic course work to certify that students have achieved basic competencies. Under such a plan, students failing to demonstrate specified abilities would undertake additional remedial work; graduation would be contingent upon passing exit tests.

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Points to Consider:

- Should high school graduates in Michigan be able to enter college without demonstrating their achievements in basic skill areas? Should standardized test scores be used as an indicator of student ability to undertake college level work?

- Should Michigan undergraduate students be able to complete an undergraduate degree program without demonstrating fundamental competencies? Which competencies should be tested? How could the interinstitutional reliability of such tests be assured? When in the undergraduate program should such examinations be administered?

- How can K-12 and higher education better articulate to assure that higher education standards are compatible with the preparation of entering freshmen and, in turn, realistically lead to the retention and graduation of competent individuals?

ISSUE TWO: HOW CAN INSTRUCTIONAL QUALITY BE ASSURED FOR SPECIAL AND NON-TRADITIONAL STUDENTS?

In addition to student grades and test scores, studies of quality often take into account the experience, age, cultural background and aspirations of enrolled students. Up until the 1940s, student characteristics were relatively stable and predictable: college enrollees were young members of the upper middle class. After World War II, the higher education system shifted from an elite to a mass constituency. Consequently, today, student profiles deviate from the characteristics of 18 to 21 year old high school graduates. Increasingly, undergraduate students are over 24 years of age, have experience in the labor market and possess concrete educational goals.

Higher education, accustomed to teaching young people under the age of 22, could come to encounter resistance from older students unless traditional methods are adapted to their unique needs. Adult learning theory provides guidelines to higher education regarding how best to adapt teaching to mature learners. According to Charles Cole, Jr. (4)

> "Authorities cite several fundamental principles in their assertions that adult learning strategies should be different....First, most adult learners are capable of self-direction....Second, the experience accumulated by adults can be a rich resource that they can bring to bear on their own educational situation. Third, adults prefer to make their own educational decisions....Fourth, most adults are interested in what they perceive to be related to their immediate concerns — working, living, their environment (p. 13)."

Effective instruction for non-traditional students may require a reduction in student-faculty ratios, increased use of seminars, off-campus courses, problem-centered learning and less reliance on classroom centered techniques. Failure to adapt instruction to the needs of these "new" students could produce dissatisfaction with the educational experience and, ultimately, transfers and attrition, especially on campuses where the number of older students is significant.

Other "special" populations of students will require adaptations and supports similar to those described as relevant to older learners. For example, students from minority cultures merit exposure to both faculty and administrators from their particular racial or ethnic group, as well as novel, culturally-oriented teaching techniques. Again, retention could be jeopardized unless instructional modes are tailored to the students in question. For these latter groups, equal access extends beyond college admission and encompasses reasonable opportunities to graduate from an institution.

It is important to note that falling scores on standardized tests should not be interpreted to mean that all high school graduates will require developmental college coursework. On the contrary, many individual Michigan students far surpass the mean on these tests. In contrast to students exhibiting academic deficits, "talented" students possess strong intellectual abilities. Because societal leadership will reside in the hands of only a few citizens, talented individuals may merit special treatment in order to prepare them to occupy these roles. Because society expects higher education institutions to develop the potential of individuals at all points on the intellectual continuum, colleges and universities could be expected to balance expenditures between programs to eliminate weaknesses and programs devised to enhance the academic prowess of talented students.

Points to Consider:

- In the Commission's opinion, what non-traditional teaching methods should be encouraged and what groups of students should receive particular attention?
- Should the Commission consider proposing faculty incentives aimed at improving the ability of faculty to teach both traditional and non-traditional students?

ISSUE THREE: HOW SHOULD UNDERGRADUATE CURRICULA BE STRUCTURED SO AS TO PRODUCE WELL-EDUCATED GRADUATES?

Measures of educational quality frequently assess the short and long range outcomes of undergraduate experiences, i.e., the skills and

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attributes acquired by students during their academic careers. A primary expectation of higher education — one endorsed by the Commission — involves the preparation of individuals to do more than just apply technical skills in the workplace. Beyond job skills, higher education is expected to accomplish five socially-desirable goals (10). Measurement of these goals is difficult, requiring longitudinal tracking of graduates, their achievements and lifestyles.

- To enrich individual capacities for satisfying work, rewarding leisure and self-development;
- To improve citizenship, enhance political participation and develop community leaders;
- To facilitate the disinterested pursuit of truth in academic research;
- To transmit, enrich and allow criticism of cultural traditions; and
- To provide a secure forum for political and social criticism.

In an attempt to instill competencies, as well as to expose individuals to Western intellectual traditions, most bachelors degree and associate of arts degree programs in Michigan involve a mixture of coursework in liberal education, basic skills and work in an area of professional specialization. The term "general education" relates to a structure for distributing course requirements to ensure achievement of liberal education outcomes. Beyond satisfaction of the economic aims of education which emphasize jobs and income, the general education structure was established to ensure that students also possess basic skills and civic virtues upon graduation. As a mechanism for developing "liberally educated" students, the general education curricular structure is intended to produce the attributes and competencies outlined below*:

1. A competency in use of the English language, including reading, writing, speaking and listening.
2. An informed understanding of the history of civilization, with an emphasis on Western civilization.
3. An informed understanding of man, the biological world, the physical sciences and scientific reasoning.

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*Listing developed based on advice from Faculty Work Group and Commission Review Panels.

4. An informed understanding of the nature of free society, with an emphasis on ethics, morality and integrity.

5. An exposure to the arts and humanities, such that the individual can achieve life satisfaction and comprehend his/her civic responsibilities.

6. The achievement of competence in mathematics and computer literacy.

7. The achievement of competence in critical thinking and problem solving, such that the individual can critically inquire about the meaning of social values and beliefs and modify performance in light of changed circumstances.

8. The achievement of competence in applying the specialized skills needed to earn a living.

As the list reveals, commitment to the aims of liberal education is rooted in the belief that advanced learning is more than simply an instrument of economic progress.

The term "liberal education" has been much misunderstood in recent times. Ahlgren and Boyer clarify the history behind today's liberal education goals (1)

> "Education as originally conceived by the Greeks was the making of men, not the training of men to make things....The Greeks used the word liberal to describe the conduct appropriate to a free citizen. They regarded liberal education as the culture of the free citizen in contrast to the uncultured vulgarity of the unfree, of the slave....Following the ancient tradition, liberal education has often meant nothing more definitive than the...liberating education suitable for free men — as contrasted with men who are...preoccupied with earning a living (p. 1)."

The general education curricular structure serves as a map to ensure that undergraduate students select and sequence courses so as to achieve a common intellectual background — a liberal education.

The current tension between higher education's economic and non-economic goals is reflected in the way roles and missions have changed to accommodate increased demands for job training. Early American higher education institutions focused almost totally on the Bible and the classics. As society became more urbanized and industrialized, colleges took on the additional task of providing the job skills necessary for survival in a complex economy. In the early 19th century, American colleges added preparation for medicine and law to their missions. After the Civil War, with the passage of the Morrill Act, agriculture, industrial mechanics and engineering were also included in college curricula. Later, business administration and social work were seen as proper subjects for study in college.

Since the 1950s, new areas have been defined as professions and added to collegiate curricula, including nursing, criminal justice, hotel management, packaging, natural resource management, to name a few. As the collegiate system became more oriented to the mass student market of the 1970s, and as student demand became more characterized by a desire for immediate job skills, individual colleges began to put more emphasis on career education. This shift in higher education priorities has produced questions about the value of investing time in the arts and humanities.

Society's commitment to the general education curriculum has waxed and waned throughout the recent history of American higher education. In the 1960s, student choice threatened society's belief in a set of experiences which every educated person should have. During this time, general education course requirements were replaced by free elective programs or distribution programs which allowed limited student course choices within mandatory categories. Today, as students further emphasize career orientations and downplay the humanities, higher education's ability to achieve the goal of liberal education is greatly weakened.

Rapid technological changes have updated the debate regarding liberal versus technical education. First, as society places greater stock in the socio-economic value of technology, young people will require more exposure to cultural values and traditions to formulate critical opinions about social means and ends. Second, in order to produce well-rounded graduates, the humanistic and technical objectives of education should no longer be seen as separate. Both foci are important in the development of human resources.

In light of the need for balance, faculty, employers and citizens are reacting to the prospect of narrowly-educated graduates by reexamining the curricular structures capable of providing educational breadth, a depth of values and flexibility in practical activity. One structure — the core curriculum — is gaining renewed support. Core curricula are versions of the general education concept where most courses are preselected for students. Structured properly, core curricula can ensure that students gain skills and socially-desirable qualities.

Points to Consider:

- Should the Commission endorse core curricular structures as a way to ensure that students gain adequate exposure to the arts, humanities, basic skill areas and practical skills?
- Should courses currently missing from the curricular offerings at Michigan colleges and universities be included on a mandatory basis? (Such courses include minority/ethnic relations, gender studies, global issues, communications skills, computer literacy and foreign language).

ISSUE FOUR: HOW CAN THE EFFECTIVENESS AND MORALE OF TEACHING FACULTY BE ENHANCED?

Because the teaching-learning function is central to the purposes of undergraduate education. research frequently focuses on the relationship between faculty morale and instructional quality. As one of the two prime factors in the teaching-learning dyad, faculty attitudes and commitment are believed to influence the satisfaction, cognitive growth and personal development of students.

In previous eras, higher education possessed the resources to develop policies and programs conducive to high morale and satisfaction among faculty members. More recently, as student demand for certain degrees has shifted, faculty are more and more divided into "high demand" and "low demand" disciplines.

Like other occupations, academicians are subject to the forces of supply and demand. However, demand in academe is greatly influenced by student preferences regarding major fields. In choosing majors, students are affected by the numbers and types of jobs available in the workforce, as well as attendant salaries and perquisites. Recently, bacholors degrees in language and literature have experienced a lower exchange value in the labor market. Student emphasis on non-academic vocational training has also recently increased. This shift in student demand has confronted faculty in low demand, liberal arts disciplines with the disillusionment accompanying underemployment.

Faculty oversupply produces problems in terms of low returns on institutional investments, increased expectations regarding productivity, fewer tenure opportunities and little, if any, professional mobility. An oversupply of tenured faculty confronts institutions with large salary and benefit costs which are not mitigated by student tuition revenues. As faculty in low demand areas change jobs, remaining faculty are expected to pick up the slack by increasing their productivity, i.e.. increased teaching loads in addition to high expectations for scholarly output.

The faculty oversupply phenomenon in low demand areas is complemented by an undersupply of faculty in high demand disciplines. Managing already marginal budgets, institutional leaders are hard pressed financially to attract faculty in areas where competent professionals are in short supply and recruitment involves keen competition over salaries and benefits.

Unable to respond to student preferences by hiring full-time faculty, some institutions compromise by hiring part-time "adjunct" faculty to provide specialized teaching during periods of disproportionate demand. Although adjunct faculty meet student learning needs, their part-time status could threaten quality by reducing both collegial interactions and the socializing relationship between students and faculty.

Institutions seeking to maintain academic breadth in light of shifting student demand face dilemmas different from those confronting industries whose labor supply exceeds product demand. Regardless of attrition, layoffs, buy-outs and retraining as short-term solutions, higher education leaders must preserve a corps of trained faculty capable of both nurturing graduate students and teaching undergraduates in future years. For this reason, the phenomena of over- and under-supply of faculty evades easy solutions. Uncharted possibilities may have to be explored in the search for ways to manage faculty demand.

Points to Consider:

- Should colleges and universities adopt measures to enhance faculty mobility and flexibility? If so, what policies and programs does the Commission recommend for accomplishing this?
- What staffing options does the Commission recommend to permit institutions to respond to shifting student preferences?
- How could the Commission increase the number of talented new faculty available to teach in Michigan institutions?

ISSUE FIVE: HOW CAN INFORMATION RESOURCES BE MORE EFFICIENTLY ORGANIZED?

Material resources are frequently figured in evaluations of educational quality. Chief among the material resources studied are the information resources and services provided by library systems. Higher education libraries are usually assessed in terms of collection size. On the qualitative side, library utilization, the breadth, depth and currentness of library holdings are more difficult variables to integrate into studies of quality.

Libraries are intrinsically related to the functions of higher education. Their missions are focused on supporting the research, instructional and information needs of their parent institutions. Like the institutions which they serve, libraries are potentially threatened by the dual pressures of budget reductions and increased costs. Leaner budgets prevent libraries from meeting the high costs of adequate staffing, automating their operations and preserving their holdings. Given the skyrocketing costs of book acquisitions, the millions of dollars annually expended on Michigan libraries will likely remain inadequate in guaranteeing quality.

These economic realities are exacerbated by an increasing demand for information services based on several factors: rapidly changing data bases, an increase in the rate at which information becomes obsolete, the accelerated emergence of new fields of inquiry and a growth of interdisciplinary fields caused by shifts in the boundaries separating established disciplines. In light of these changes, traditional library activities will need to be modified to take advantage of comprehensive automation techniques.

Library procedures are costly and labor intensive in nature. By now, larger libraries throughout the state have begun to apply labor-saving technologies to their book purchasing. cataloging, circulation and interlibrary loan activities. To date, however, formal or quasi-formal relationships between libraries have yet to be forged or funded.

The development of library consortia would spread the financial burden and the responsibility for collection development among participating libraries. Specifically, collaboration could eliminate duplicative purchasing on the part of individual institutions and improve the ability of institutions to locate and retrieve relevant bibliographic information. By building on the economies of cost-sharing, computer-based library networks would allow institutions to redirect spending from labor-intensive basic operations to support for priority research and teaching projects.

Points to Consider:

- Should the Commission recommend incentives leading to development of computerized consortia connecting higher education libraries throughout the state?
- Should the Commission support studies of the need for, and implementation potential of, institutional library collaboration?
- Should the Commission consider stimulating the implementation of library networks between Michigan libraries and those in other states?

SECTION THREE:

SUMMARY

The majority of quality studies are insufficiently comprehensive to be of help in the search for universally useful definitions. Futhermore, judgments about quality are most frequently based on subjective perceptions of what satisfies social expectations and what does not.

Lacking consensus about quality indicators, the Commission is encouraged to rely on its collective experience and public opinion in isolating thore threats to undergraduate quality which may prevail during the remainder of the twentieth century. Using these sorting criteria, attention might be focused on the competency and instructional needs of students, the structure and goals of curricula, the morale of faculty and the organization of information resources.

Deliberations about the quality of undergraduate education should also acknowledge that public opinion alone is not sufficient to explain the widespread fear that educational standards and excellence are in jeopardy. Social and political pressures — budgetary, demographic, institutional — are notorious in influencing how much higher education can maintain, promote or increase the quality of its endeavors, Five of the pressures facing higher education policymakers are summarized below.

- Unstable Revenues. Quality education is directly affected by the stability or instability of funding. In the recent past, public appropriations have fluctuated in a downward, unpredictable manner. Revenue instability of this sort increases the probability that program decisions will reflect a concern for survival rather than quality. Likewise, tuition — the cost borne by students and families — has been treated as a counterweight to falling appropriations. To whatever extent affordability is associated with quality, skyrocketing tuition levels are threats.

- Fluctuating Enrollments. It is estimated that the numbers of traditional college age students will decline over the next fifteen years. This projected drop in 18-24 year olds could become a threat to quality if institutions are forced to compete for students by lowering admission standards, loosening graduation requirements and engaging in questionable recruitment practices.

- Changing Student Profiles. (1) Increasing numbers of older students are attending college on a part-time basis. These "non-traditional" students possess different learning styles and expectations than their younger counterparts. (2) Today's undergraduate students — regardless of age — are enamoured of majors in vocational fields. This demand for career-oriented learning could undermine quality by producing narrow technicians rather than liberally-educated individuals. (3) More of today's entering students are academically deficient in basic areas. Unless scarce resources are used to remedy these weaknesses, diplomas will lose their value as indicators of personal and intellectual competence.

- Slow Pace of Change. Like other complex organizations, higher education institutions change slowly and only in collaboration with representatives of various clientele groups. Accrediting bodies influence program standards, political units — both off and on campus — have a stake in shaping policy decisions, faculty are often inclined to prefer "business as usual" solutions to problems. To whatever extent quality is a function of institutional adaptability, one potential obstacle to decisive behavior is the slow pace at which institutions embark upon new pathways.

- Increased Social Tasks. During the last two decades, society has increasingly relied on higher education to meet its public policy objectives. As a result, colleges and universities are held accountable for facilitating the personal and social mobility of America's disadvantaged and its women. Without adequate resources and public support, quality may be affected as higher education is forced to weaken its responsibility to the physically handicapped, non-traditional students, deficient students and talented students.

Educational policy advisors will need to juxtapose their quality ideals and the above obstacles to quality as they seek ways to prevent mediocrity from characterizing the higher education system.

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A SUMMARY OF OTHER STATES' HIGHER EDUCATION SPECIAL COMMISSION AND TASKFORCE ACTIVITIES

STATE OF MICHIGAN

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A SUMMARY OF OTHER STATES' HIGHER EDUCATION SPECIAL COMMISSION AND TASKFORCE ACTIVITIES

Prepared For

Governor's Commission on the Future of Higher Education

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Introduction

Many states are presently evaluating both their K-12 and postsecondary education systems in terms of costs, accountability, and quality, using the mechanism of a special commission or task force, rather than an established planning agency. According to the Education Commission of the States (Working Paper on Special Task Forces STF-83-1) forty-five states have convened task forces to study questions of education policy. An examination of available reports, supplemented by telephone interviews, from twenty-three task forces reveals certain common characteristics:

- creation by the governor and/or legislature
- time-limited existence (two months to two years)
- membership drawn from diverse constituencies, including business, labor, and the professions
- a charge to produce recommendations for revision of current educational policy and practices

These task forces and their recommendations pertaining to higher education are listed in Appendix A.

Comparisons among states are complicated, as labor needs, economic development trends, available revenues, and patterns of educational governance differ widely. Table One lists information on the student enrollment in the state systems and number of two and four-year institutions. Michigan is ranked seventh in total enrollment in postsecondary education, and fifth in number of students enrolled in public institutions, figures which indicate the magnitude of the higher education endeavor in the state.

States share the following concerns relating to higher education:

- How can business and higher education share resources and knowledge, working together more effectively?
- How can the quality of instruction be maintained and enhanced?
- Is the funding base adequate to meet the state's needs?

These concerns are variously addressed by the task forces.

Categories of Task Forces

The task forces may be divided into four categories: (a) those primarily concerned with elementary/secondary education issues, (b) those concerned with promoting the interaction of the educational and business sectors,(c) those dealing with specific postsecondary issues, and (d) those which comprehensively examine the postsecondary system in terms of quality, accessibility, economic revitalization and financial support.

(a) Elementary/Secondary Education Task Forces

These task forces deal with K-12 education issues similar to those discussed in the National Commission on Excellence in Education's report, A Nation at Risk.

- How to accomplish the goal of an improved national K-12 education system
- What roles and responsibilities to assign members of the learning enterprise
- How to acquire the resources appropriate and adequate to the tasks

Common features of these reports are recommendations for a strengthened core curriculum, provision of services for students with unique needs, improvement of teacher compensation and training and continuing education possibilities, more efficient use of the school day/week/year, and increased state support of education.

Postsecondary education is not the primary focus of the reports of these task forces, although teacher training issues are examined. None the less, the task forces recommend these initiatives:

- revision of teacher education programs
- incentive programs encouraging talented students' enrollment in teacher education programs, especially in the areas of math, science, and computers
- forgivable loans for students contracting to teach within the state for a specified time
- direct grant programs for potential teachers
- development and expansion of continuing education programs for teachers, especially in the fields of math, science and computer instruction.

(b) Business and Technology Task Forces

These task forces deal with the relationship of business and education. Their recommendations range widely, according to the needs and interests of the particular state. They discuss the promotion of interaction between the educational and business sectors, either in terms of job creation, training and re-training or in terms of the provision of support services to the business and industry community. Generally, the business and technology task forces recommend the following initiatives:

POSTSECONDARY EDUCATION SYSTEMS BY STATE, 1982 STATISTICS

State	Total Enrollment (1981-82)	% Enrolled in Public Institutions	Total Numbers Enrolled in Public Institutions	4-Year Institutions		2-Year Institutions	
				Public	Private	Public	Private
California	1,885,757	89.7	1,691,524	30	123	106	13
New York	1,014,863	56.4	570,127	40	168	46	40
Texas	716,297	87.4	626,044	39	52	59	6
Illinois	659,623	76.4	503,952	13	83	50	12
Ohio	521,396	73.8	384,790	18	62	41	15
Pennsylvania	517,879	56.7	293,637	24	108	37	33
Michigan	513,033	86.9	445,826	15	41	29	6
Florida	426,570	81.0	345,522	9	35	28	9
Massachusetts	417,830	42.7	178,413	15	65	17	21
New Jersey	322,797	77.0	248,554	14	26	17	4
North Carolina	295,771	79.9	236,321	16	34	58	19
Virginia	286,015	87.8	251,121	15	28	24	2
Washington	278,680	89.6	249,697	6	16	27	1
Wisconsin	275,325	87.5	240,909	13	30	17	4
Indiana	251,826	76.7	193,150	13	37	15	9
Missouri	243,672	71.0	173,007	13	54	15	7
Maryland	229,936	85.9	197,515	13	21	19	3
Minnesota	210,713	78.5	165,410	10	32	20	8
Arizona	205,169	95.3	195,526	3	8	16	1
Tennessee	200,183	76.4	152,940	10	40	14	15
Georgia	191,384	76.4	146,217	18	29	16	15
Louisiana	174,656	86.3	150,728	14	11	6	1
Colorado	167,977	89.1	149,667	18	15	14	3
Alabama	166,375	87.2	145,079	16	15	21	7
Oklahoma	162,825	85.8	139,704	14	11	15	4
Connecticut	162,367	81.3	132,004	7	19	17	4
Oregon	149,924	88.4	132,533	8	21	13	3
Kentucky	144,154	80.1	115,467	8	22	13	14
Iowa	143,105	69.8	99,887	3	34	18	5
Kansas	138,453	89.7	124,192	8	20	21	3
South Carolina	132,394	82.3	108,960	12	19	21	8
Mississippi	105,974	89.6	94,953	9	10	16	6
Utah	97,048	63.6	61,722	4	3	5	2
Nebraska	93,507	82.1	76,769	7	13	9	2
District of Columbia	88,553	15.9	14,080	1	18	0	0
West Virginia	82,375	86.7	71,419	12	8	4	4
Arkansas	76,032	84.9	64,551	10	10	9	6
Rhode Island	68,339	51.7	35,331	2	9	1	1
New Mexico	60,413	94.8	57,272	6	3	10	0
New Hampshire	48,524	52.6	25,524	3	11	8	4
Hawaii	48,121	93.7	45,089	3	3	6	0
Maine	44,012	73.6	32,393	7	13	5	4
Idaho	42,758	79.2	33,864	4	2	2	1
Nevada	39,936	99.5	39,736	2	1	4	0
Montana	35,959	88.6	31,860	6	4	3	3
North Dakota	35,446	92.7	32,858	6	4	5	2
South Dakota	35,015	75.0	26,261	7	9	1	3
Delaware	32,061	87.8	28,150	2	3	3	0
Vermont	30,573	59.7	18,252	4	14	2	1
Alaska	24,754	96.4	23,863	3	3	9	0
Wyoming	21,325	99.9	21,304	1	0	7	1

National Center for Education
Statistics, HEGIS Survey 1982,
Digest of Education Statistics,
1982

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- Stimulation of colleges and universities' research function through increased funding
- endowment of faculty chairs in specific subject areas
- creation of special institutes or initiative centers
- creation of information transfer networks
- creation of small business assistance programs
- creation of joint research and development centers
- shared facilities use between business and education

Such initiatives are discussed both from the perspective of state economic development and the traditional public service role of public higher education.

A description of the recommendations or implemented programs of three states gives an overview of possible initiatives. Connecticut's "Jobs for Connecticut's Future" task force is undertaking a broad analysis of the state's labor needs for the next twenty years. The task force has commissioned the Massachusetts Institute of Technology to create human resources' demand predictions for the state, and analyze the specific job skills required for predicted employment opportunities. Based on this data, a comprehensive training program will be devised to meet the needs of the state's businesses. Job training functions will be shared by private industry and both public and private educational insitutions.

Iowa's "Task Force on High Technology" has recommended several initiatives:increased on-campus research funds for high-technology industries, the development of an on-campus "incubator" system for small business which provides space and staff support for fledgling enterprises, and the development of a technology transfer program to aid the transferral of research from the campus to industry.

Pennsylvania has implemented a program, "The Ben Franklin Partnership," creating advanced technology centers in the state, centered around educational institutions in Philadelphia, Pittsburgh, Bethlehem, and State College. These centers engage in joint research and development, education, training with both business and labor, as well as providing entreprenurial assistance and seed grants to small businesses. The program is currently funded at $10 million yearly from state funds, with $28.9 million in matching funds from other sources. Pennsylvania also undertakes a technology transfer program, "Penntap," which provides information on current research for state businesses, as well as referral to faculty members with particular areas of expertise or interest. Appendix B contains further information on Pennsylvania's programs.

(c) Taskforces dealing with Specific Postsecondary Issues

These taskforces seek input from varied constituencies on specific issues affecting higher education. A financial crisis may precipitate the formation of such a task force. For example, Wisconsin's "Committee to Review Faculty Compensation" was formed in response to concerns over the adequacy of the funding base for the state public higher education system, possible effects on quality, and faculty concern over salaries. New Mexico's "Commission on Higher Education" was created in response to concern over the underfunding of state institutions, in light of previous significant tax cuts. The commission's preliminary report recommends increased faculty/staff compensation, increased funding of scholarship programs, and increased funding for libraries and equipment. Such funding increases would require an increase in the state income tax, an increase recommended by the commission.

(d) Comprehensive Taskforces

Few taskforces attempt to address a broad range of higher education issues, including curriculum, program access and equity issues, business and technology linkages, and questions of financial support. North Carolina's "Commission on the Future of North Carolina" and Virginia's "Commission on Virginia's Future" do treat a broad range of issues of concern to the state, but these task forces do not have a higher education focus. Rather, these two task forces attempt to analyze future trends for the state, and higher education is not discussed at length. This is in contrast to Michigan's "Commission on the Future of Higher Education" which is responding to the governor's charge to examine the present postsecondary system in terms of quality, diversity, access, research, public service, academic excellence and economic revitalization,in order to recommend future goals, and means of achieving those goals, for higher education in Michigan.

APPENDIX A

RECOMMENDATIONS PERTAINING TO HIGHER EDUCATION ISSUES - SPECIAL STATE TASK FORCES ON EDUCATION ISSUES

ARIZONA

Governor's Committee on Quality Education K-12 Report Date - November, 1983

- create task force to examine teacher training

CALIFORNIA

The Business Round Table Sub-Committee on Jobs and Education K-12, Business & Tech. Report Due - Fall, 1984

COLORADO

Colorado Advanced Technology Commission Business & Tech. Report Date - January, 1984

- create Advanced Technology Institute to communicate needs of advanced technology industry to the university system

CONNECTICUT

Joint Committee on Educational Technology K-12 Business & Tech. Report Date - September, 1983

- create consortium on educational technology, with K-12, postsecondary, library, business membership
- establish clearinghouse for educational technology information
- plan curricula in postsecondary institutions to familiarize students with educational technology

Distinguished Citizen's Task Force on Quality Teaching K-12 Report Date - September, 1983

- create professional development programs for educational personnel
- develop programs to attract talented students into the teaching profession

Jobs for Connecticut's Future Business & Tech. Report Due - Fall, 1984

IOWA

High Technology Task Force Business & Tech. Report Date - November, 1982

- concentrate research & development in Biotechnology, Microelectronics, Productivity Enhancement/Process Controls, Energy alternatives
- develop information transfer mechanisms between industry/university/government/public
- establish Iowa High Technology Commission for planning high tech. development
- emphasize advanced technological training in community colleges, especially for adult re-training

IDAHO

Governor's Task Force on Education for the Eighties K-12 Report Date - November, 1983

- entrance requirements for state colleges & universities
- create a community college system with open admission policy
- implement tuition charges, to increase funds available
- impose rigorous admission standards for teacher training programs, and upgrade these programs

ILLINOIS

Governor's Task Force on High Technology Business & Tech. Report Date - March, 1982

- develop high technology facilities in association with universities/Argonne Lab/Fermi Accelerator Lab
- establish High Technology Research and Development Commission to advise concerning advancement of high technology
- strengthen academic programs supportive of high technology, reviewing faculty salaries,enrollment policies
- advance research programs involving both university and industrial scientists

Education for Employment Specific Issue task force Report Date - October, 1982

- expand student loan program
- encourage links between community colleges and business
- create Institute for Advanced Engineering Studies

KANSAS

Governor's Task Force on High Technology Development Business & Tech. Report Date - September, 1983

- increase support of research activities at major research universities
- support a technology transfer conference
- develop a new funding formula for higher education
- encourage a high technology coalition involving major universities

MARYLAND

Task Force to Study the Funding of Public Education Specific Issue task force Report due - June, 1984

MICHIGAN

The Governor's Commission on the Future of Higher Education Comprehensive postsecondary review Report Due - October, 1984

NEBRASKA

Governor's Task Force on Excellence in Education K-12 Report Date - Fall, 1982

- pursue partnerships between business, universities, and K-12 education
- hold state-wide conference on technology in education in 1984

Committee on the Utilization of Technology in Education Specific Issue task force Report due - Spring, 1984

NEW MEXICO

Governor's Commission on Higher Education Specific Issue Task Force Report Date - October, 1983

- increase funding for graduate and merit scholarship program
- increase funding for faculty compensation
- increase funding for libraries and equipment
- actively monitor affirmative action program

NORTH CAROLINA

Committee on the Future of North Carolina K-12, broad state issues Report date - Fall, 1982

- conduct further studies concerning access to higher education
- create incentive program to attract high-quality applicants for teacher training programs

Governor's Task Force on Sciene and Technology Business and Tech. Report Date - November, 1983

- create Blue Ribbon Panel on Higher Education and State Needs
- increase funding for research institutions and engineering schools, with attention to faculty compensation
- increase available aid for graduate students
- institute measures to allow increased flexibility in individual institution's resource allocation

PENNSYLVANIA

An Agenda for Excellence in Pennsylvania Public Schools K-12 Report Date - October, 1984

- fund scholarship grant program for top 1% of high school graduating class
- increase academic standards in teacher training programs

The Ben Franklin Partnership Business and Tech. Implemented program

UTAH

Utah Education Reform Steering Committee K-12 Report Date - November, 1983

- revise teacher training curricula
- grant scholarship aid for prospective math/science teachers

VERMONT

The Vermont Seminar on Education Business & Tech., Specific Issues Report Due - Fall, 1984

VIRGINIA

Governor's Commission on Virginia's Future Broad State Issues Report Due - Fall, 1984

WEST VIRGINIA

Governor's Task Force - Science and Technology Business & Tech., Report Date - July, 1983

- establish comprehensive training policy for vocational education and community colleges
- increase funding for equipment replacement/purchase
- support research and development in universities, seeking matching funds from private industry
- provide off-campus, part-time graduate programs for workers in the high technology industry
- create consortium to maximize research resources at the three major universities

WISCONSIN

Committee to Review Faculty Compensation Specific Issue Task Force Report Due - June, 1984

APPENDIX B

ADVANCED TECHNOLOGY:
THE BEN FRANKLIN PARTNERSHIP

The Ben Franklin Partnership is a program unique among the states to promote advanced technology, the use of new techniques in both mature industry and in new fields and enterprises. The partnership links private and educational resources, particularly research capabilities, to make traditional industry more competitive in the international marketplace, and to spin off new, small businesses and to help recruit new investment. It also provides resources to address education and training needs and entrepreneurial development services including small business incubator facilities.

CHALLENGE GRANTS/ADVANCED TECHNOLOGY CENTERS:

Ben Franklin Partnership Challenge grants have provided matching funds to establish four advanced technology centers which represent consortia of private sector, labor, research universities and other higher education institutions, and economic development groups.

During 1983-1984 (fiscal year) the centers will share a state appropriation of $10 million, which is being matched by a $28.29 million contribution from consortia members, including $16.3 million in private sector support.

Each center provides:

Joint research and development efforts, in concert with the private sector, in specified areas such as robotics, biotechnology and CAD-CAM. (These areas vary by center with each emphasizing 4 or 5 areas.)

Education and training, assisting all education institutions to provide training and retraining in technical and other skill areas essential to assisting firm expansions and start-ups.

Entrepreneurial assistance services including linking R & D, entrepreneurs, venture capitalists, and other financial resources; assisting in preparation of business plans and feasibility studies; and providing small business incubator space and services, technology transfer activities and other services.

The four regional centers and their primary areas of research in 1983 are:

NORTH EAST TIER ADVANCED TECHNOLOGY CENTER

This center includes Lehigh University and 17 other private and public colleges and universities, 51 industries, small business development centers, and 21 economic development groups and organizations. The primary areas of research and development are CAD-CAM; polymers/materials, microelectronics and biotechnology.

ADVANCED TECHNOLOGY CENTER OF SOUTHEASTERN PENNSYLVANIA

The University City Science Center is joined by University of Pennsylvania, Drexel University, Temple University and 12 other public and private colleges and universities, 36 private firms, and other groups and organizations. Their primary areas of research and development are advanced sensor technologies, human adaptability in space, advanced biomedical and technology to benefit the handicapped.

WESTERN PENNSYLVANIA ADVANCED TECHNOLOGY CENTER

This center is a consortium of Carnegie-Mellon University, the University of Pittsburgh and 11 other public and private colleges and universities, 23 private firms, venture capitalists, as well as economic development groups and organizations. Their primary areas of research and development are robotics; high technology materials, process and devices including coal; and biological/biomedical technology, and metals.

ADVANCED TECHNOLOGY CENTER OF CENTRAL/NORTHERN PENNSYLVANIA

This center includes the Pennsylvania State University and 23 other colleges and universities, 85 private sector firms, and other groups and organizations. The primary areas for research and development are electronic materials, food and plant production/energy conservation, coal, biotechnology, and manufacturing technologies. (This includes two satellite centers at Erie and Harrisburg-York.)

SMALL BUSINESS

RESEARCH "SEED" GRANTS

In 1983-1984, the Ben Franklin Partnership will devote $250,000 to a research "Seed" grant program for small businesses seeking to develop or introduce advanced technology into the marketplace.

The Seed grant proposal deadline is October 15, 1983, with awards to be made early in 1984.

Grants are a maximum of $35,000. To qualify, a business must employ 250 or fewer employees, with preference given to firms with 50 or fewer employees. While grants will be made directly to qualified businesses, firms will be strongly encouraged to coordinate their work with the four Ben Franklin Advanced Technology Centers. Applications are evaluated based on technical merit, potential for job creation, linkage with the Ben Franklin Partnership and commitment to continued funding independent of state aid.

PENNSYLVANIA RESEARCH INVENTORY PROJECT (PRIP)

Pennsylvania has compiled an inventory of research capabilities in the state in a program partially funded with a Ben Franklin Partnership grant. The inventory is catalogued in a volume available through depository libraries, regional economic development organizations and educational institutions, as well as through the Department of Commerce.

In addition, the Commerce Department staff can provide a computer profile of research capabilities in the state in response to a specific request, using a system with the latest in available software. Profiles are available on equipment and special capabilities, by geographic area or other criteria, as well as by research focus, products or output.

PENNSYLVANIA FIRSTS IN THE NATION

**** Pennsylvanians have invented, patented or discovered:***

- ***electronic computer***
- ***polio vaccine***
- ***"honey bee lens" for people who are partially blind***

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The Ben Franklin Partnership is managed by a 15-member board which includes private sector, small business, education, labor and legislative representation. The board approves all grants. All grants are made on a competitive basis, as are continuing grant approvals for Advanced Technology Centers and other activities.

TO THE YEAR 2000: FUTURE TRENDS AND IMPLICATIONS FOR HIGHER EDUCATION

STATE OF MICHIGAN

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TO THE YEAR 2000; FUTURE TRENDS AND IMPLICATIONS FOR HIGHER EDUCATION

Prepared For

GOVERNOR'S COMMISSION ON THE FUTURE OF HIGHER EDUCATION

March 1984

TO THE YEAR 2000; FUTURE TRENDS AND IMPLICATIONS FOR HIGHER EDUCTAION

From Megatrends to The Third Wave, popular literature and noted scholars are delineating the major factors that will shape and change American society over the next twenty years.

The Governor's Commission on the Future of Higher Education engaged David Pearce Snyder, noted futurist and strategic planner, for his analysis of future trends and their implications for higher education, particularly in Michigan.

In a day-long presentaion, Snyder provided a review of current national trends and their significance for the next fifteen years, the only period he believed could be accurately predicted. He also provided an opportunity for participants to develop conclusions based on different future scenarios.

What follows is a summary of Snyder's presentation, conclusions implied by the data and/or generated through group interaction, and options which should be evaluated as higher education plans for the future.

Work Force and Demographic Trends

Several factors are currently at work which will create major changes in the nature and composition of the work force and the employment options available to traditional mid-career workers.

Entry Level Workers: Declining birthrates between 1960 and 1975 will result in a shortage of young adults (16-24) to meet the need for entry level workers over the next 15 years. This shortfall, Snyder asserts, will be made up by women returning to the work force and older workers--retired or those displaced in mid-career. Immigration may also increase during this period as the demand for entry and unskilled workers grows.

Mid-Career Workers: While the traditional entry work force declines, mid-career workers will grow by an estimated 70 percent between 1980 and 2000 as a result of the post war baby boom reaching middle age. This growth comes at a time when major companies are streamlining their management ranks, eliminating levels of management and seeking managers with special skills or training. It is estimated that by 1990 there will be thirty candidates for every mid-management job compared with a ten to one ratio in 1975. (Appendix A)

The results of these mid-level changes will be little upward mobility and new efforts by employers to find other ways of rewarding workers, such as movement across department lines and rotating managers' assignments.

Women Workers: Though women have been entering the work force in steady numbers throughout the last decade, this trend is expected to continue with women projected to comprise 47-49 percent of the work force by the year 2000, up from 39 - 40percent today. Snyder estimates women will comprise 65 percent of all new hires during the 1983-95 time period.

Minority Workers: The declining birthrates have been predominately in the white population while minority birthrates have remained constant. It is, therefore, expected that the proportion of minorites in the population will increase throughout the next twenty years with minorities composing 25 percent of the work force by 2000.

New Baby Boom: A new baby boom is now underway and is expected to peak around 1988. Snyder indicated this new boom is caused in part by an increase of women 30-34 having their first child and the lowest infant deathrate on a national average ever recorded.

The increased birthrate is not, however, expected to increase household size which has steadily declined due to high divorce rates and couples waiting longer to have children. The average household size was 2.72 in 1982, down from 2.76 in 1980; 3.14 in 1970.

Economic Trends

Two major economic changes are occurring simultaneously. One is a shift in economic base and the other in the workplace, its location and operation.

Economic Base: Since the 1950s the economy has been gradually moving away from the industrial base and toward information as the primary economic force. In the next twenty years the greatest capital investment will occur in the information sector with advanced technologies and equipment comprising the major expenditures.

In industry, the U. S. work force is expected to be significantly reduced as a result of robotics and foreign competition.

By 1990 only 11-12 percent of U. S. workers will be in the industrial sector compared to 38 percent in 1950; 22 percent today.

The agricultural and information sectors will also see a decline in employment as new technologies are introduced. The service sector is expected to increase as it picks up workers displaced in the other sectors. It is projected that the service employment will grow from 28 percent of the work force today to 33-35 percent in the next ten years. (Appendix B)

Increased automation will create some jobs as others become obsolete, but these new jobs will be different in nature and require specialized skills. The ability to retrain portions of the work force to meet the new demand is critical if a stabilized economy is to be maintained.

Work Place: Just as the kind of work people do is changing, so too is the place where that work is done. (Appendix C) Hours of work are becoming more flexible with the introduction of new concepts like flextime and job sharing. Within ten years, it is projected that the standard work week will be 36 hours, usually four, nine-hour days. (Appendix D)

The way in which the workplace is managed is also changing largely influenced by foreign competition and worker demands for greater participation in the decision making process. Snyder reported that Japanese automobile companies have four layers of management while Ford had fourteen until recently, when five were eliminated.

Current American industrial management techniques were developed 75 years ago when the majority of workers either didn't speak English or were illiterate. With a more educated work force, the old methods are no longer valid and participatory, decentralized companies are outperforming traditional ones in the market place. It is expected that this trend will continue to grow with workers having a voice in the various aspects of the company's operation long felt to be the perogative of management.

With greater fluctuation in the options of workers an increasing number are considering self-employment for themselves. Self-employment bottomed out at 7 percent of the work force in 1970, but has been climbing since. Currently, 8.5 percent of the work force is self-employed, expected to rise to 10 percent by 1990, 15 percent by the year 2000.

The growth of information enterpreneurships account for a large percentage of the new self-employed. These include consultants, technical writers and editors, commercial scholars, programmers and illustrators which are all in demand with consulting, the fastest growing occupation.

The increase in personal home computers and self-employment will expand the numbers of persons working at home, projected to be 5 percent by 1983 and growing.

The industrial revolution brought American workers into large metropolitan areas, but with the shift to an information economy, there are, also, major changes in where people choose to live. During the past 10 years, rural areas and exurbia grew three times faster than the suburbs; five times faster than the cities.

High tech companies have greater flexibility in where they locate than large industrial plants did. When major factors that influence their location decisions are listed, the availability of technical, skilled, and professional workers is said to be the top priority. (See Appendix E) Businesses will chose to locate in places which optimize access to and/or the ability to attract these trained workers. To date, the most popular location has been exurbia--defined by Snyder as those areas 30 to 100 miles from large urban centers. In addition to proximity to large population areas, exurbia also offers some of the other factors listed as desirable such as, lower tax rates and access top good schools and recreational activities. The South and Sothwest are becoming favored regions of the country in terms of population gain, though there has also been substantial growth in the mountain states over the past 10 years.

States like Michigan can compete, Synder asserts, because of their already exsisting trained work force, but it will be necessary to develop outreach efforts to attract these businesses and create a positive economic climate.

Education Trends

Education in all its forms will become the nation's fastest growing industry by the year 1990 with annual expenditures expected to be at least doubled by that date. Sixty-six percent of the increase will be spent on retraining workers.

The private sector will be making as great an investment in its work force as it does in new equipment with 50 percent of the costs of automation being associated with training--10 percent with hardware and 40 percent, software.

Snyder predicts that over the next 15 years, one-fourth of the work force will leave to be retrained either to regain employability or shift to careers offering greater potential for upward mobility while another one-fourth to one-half will have to be retrained to work with new technologies in their existing jobs. The retraining will vary from specialized classes offered by employers to full degree programs.

The need for retraining will mean a shift in those persons seeking education from children to adults, who are projected to comprise 60 to 80 percent of those in "classrooms" within 10 years, compared to 20 - 40 percent today. In this case, "classroom" is broadly defined to include hotels, regional centers, correspondence classes, home computers and video machines as well as traditional school buildings and campuses.

There will be a shortage of teachers to meet the increased demands for education, particularly those with specialized training. One solution may be the retraining of displaced managers in appropriate fields to become teachers.

Education will be more closely linked to economic development. While current workers are in need of retraining to keep pace with new technologies, employers and institutions of higher education will be expecting future ~~women~~ workers, students now in the

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K-12 system, to have learned the skills necessary to compete by the time they graduate. Yet today, many employers and college professors complain that high school graduates cannot perform basic tasks such as mathematics--decimals and fractions, and English--spelling and grammar.

The quality of education is, therefore, being challenged in the face of demands for a better trained work force. Yet, there is little argeement on what the standards should be and how to meet the stated objectives.

Lists of minimum skills needed to compete in the future job market are being drafted by committees, agencies and institutions concerned with the problem. Snyder used lists prepared for the U. S. and Canadian governments to illustrate the diversity of aproaches. The U. S. list dealt with acquired personal traits, such as problem solving, creativity and team building; while Canada focused on measurable academic training in mathematics, communications and reasoning with some interpersonal skills also included. Snyder felt the Canadian list was more practical. (Appendix F)

Teaching methods is another issue Snyder felt must be addressed in any discussion of improving students' learning. He quoted studies which concluded that the computer alone did not significantly increase learning but combined with other factors such as quality materials, peer involvement, and precision teaching, it could make a critical difference. Precision teaching is defined as weekly multidimensional measures of a student's learning advances and was prohibitive when teachers had to grade papers by hand. The computer is not only a learning tool but also enhances the quality of instruction.

Snyder argues that the issue around quality is not changing the curriculum, but rather the methods of delivering that curriculum, which need to be improved if the desired learning and achievement results are to be attained. With the increaased advancement in technology the current need is for people who are thinkers, not only able to learn the material, but also able to apply it in every day life and work experience.

Implications for Higher Education

The future trends, outlined by Snyder, will have a profound impact on higher education over the next fifteen years.

A change in the composition of the typical student body is already underway as parttime and older students, women and minorities comprise a larger percentage of college enrollments. Increased diversity necessitates other changes including where and when classes are taught, student services available, types of curriculum offered and methods of teaching. Many of these changes are already being made, but the need will accelerate with increased demand.

Institutions of higher education, both four-year and community colleges, will increasingly need to offer classes and complete degree programs in the evenings and on weekends to accommodate students with fulltime employment. Classes will also need to

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be offered in cities and towns often using private meeting facilities to reach returning students where they live and work.

Such mobile classes are likely to be supplemented by greater use of video learning and more sophisticated programmed instruction offered for use on personal home computers. The new technologies will provide both the challenge and the means to meet many of the projected education and retraining demands.

Bilingual education will become more prevalent if immigration increases as expected and/or a larger percentage of the population is bilingual or has English as a second language.

There may be a greater need for remedial and developmental programs if the K-12 system does not prepare expanded education requirements for graduation. These requirements will continue to be more necessary as technology increases in sophistication.

Increased diversity in the student body will mean changes in the goals and objectives of individual students relative to their education. It will be important that higher education faculty and administrators are of the changes and in a position to accommodate them.

- The traditional student seeking an undergraduate or graduate degree will still be present on campus as will returning students in need of a few credits to finish their degrees. One difference may be that mature and returning students will expect acknowledgement of their life's experiences and may balk at introductory level classes which purport to teach them what life already has.

- Other returning students will not be planning to obtain a degree, but rather need a specific group of courses to upgrade their skills. This group will not have the time or interest in classes beyond those required to meet their specific purpose and will expect such classes to be available without unrelated prerequisites or class status requirements.
- College graduates may need to return for additional coursework to keep current or to learn new skills if they have been displaced from the job they trained for in college. These students are also likely to be more interested in a specific course than a degree program and their needs will have to be recognized and accommodated.

The traditional, degree-track student will face a different learning philosophy on campus than was known in the past, when degree attainment was seen as the end of formal education. With rapidly changing technologies, future graduates will be required to continue learning and updating skills throughout their careers.

This lifelong learning emphasis will provide a twofold challenge for higher education. First, students will have to be trained as "learners," people who can learn new information rapidly, and are prepared to do so on an ongoing basis. Second, higher education will need to establish a vehicle whereby graduates can be routinely updated on advancements made in their fields. The updating process may take the form of regular newsletters, periodic seminars or use of learning tools (software or cassettes).

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Keeping the lines of communication open with former students will be one way of meeting the competition which the new education technology will create. The video and computer learning systems will make it possible to take courses from any institutions or private enterprise that makes them available. As many returning students will be more concerned with gaining knowledge than degrees, the major concern will be the quality and price of material offered rather than the source.

In addition to traditional curriculum and retraining options offered by higher education institutions, a large body of retraining will be done by the private sector. Businesses will be providing on-the-job training for their employees, while other entrepreneurs will be developing specialized training programs for sale to businesses and individuals.

Higher education institutions could capitalize on their already existing expertise by forming training partnerships with the private sector, similar to those already in place for research. Such training agreements would allow business access to the store of knowledge available in the education community, while allowing education to keep current on the human resource demands of the private sector, a critical factor in an increasingly competitive market.

Conclusion

Exploit the inevitable, Snyder asserts. If you know something is going to happen, do something about it!

The question raised by the Snyder data is not so much whether change is occurring, but rather how to meet the challenges of that change. For Michigan, the long-term stability of the economy and our future economic growth may well depend on the answer.

Michigan is in a unique position to attract its share of the emerging information sector by marketing its two major assets--an already skilled work force and an excellent statewide system of higher education.

Higher education institutions can capitalize on increased technology to export their academic excellence throughout the nation and the world. Instead of fearing competition from other institutions and the marketplace, we can become the competition by choosing to market new approaches to learning such as developing video and computer courses for sale or establishing training partnerships with the private sector.

Just as the smokestack is fading so also is the ivy covered university catering only to 18-21-year-olds who seek a formal degree to finish their education. From here on that education will begin with a formal degree and continue through one's lifetime.

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The particular challenge for higher education will be how to preserve its traditional functions in a way that recognizes the changes occuring in the market place and the needs of the returning student. Flexibility would seem to be the key ingredient as administrators look ahead.

Snyder cautioned that any institution is a "gridlock waiting to happen." It must not happen here.

THE WALL STREET JOURNAL, THURSDAY, OCTOBER 22, 1981

Onward, Not Upward: Promotions Are Growing Few For 'Baby Boom' Generation Hoping to Get Ahead

Blocked Paths:

Promotions Grow Few As 'Baby Boom' Group Eyes Managers' Jobs

Demographers See a Decade Of Frustrated Employes With Thwarted Goals

New Definitions of Success

By EARL C. GOTTSCHALK JR.
Staff Reporter of THE WALL STREET JOURNAL

LOS ANGELES—Harold Brown had been on the fast track ever since he joined a large accounting firm seven years ago as a specialist in tax accounting, real-estate planning and trusts. At the age of 35, he had risen through five levels of his firm's six-tier hierarchy and was making $51,000 a year.

But when management consultant Richard A. Hoffman interviewed him, he found a "deeply frustrated and disappointed man." Mr. Brown (the name has been changed) felt he deserved a partnership and a salary of $70,000 to $100,000, but his employer told him that no openings were available for new partners.

Executives of the firm told Mr. Brown that he was capable and deserving but that he would just have to wait in line because the firm had an oversupply of bright, young overachievers in their 30s. Competent men in their 40s held partnerships, and executives said they could not see replacing one of their own with Mr. Brown.

Stuck on the Ladder

Mr. Brown is among the first of the baby-boom generation to undergo the frustration and disappointment that demographers expect his age-mates to experience in large numbers in the 1980s. For persons born between 1945 and 1964, the 1980s will be a decade of scarce promotions, frustrated expectations and job hopping, says Peter Morrison, a demographer at Rand Corp., the think tank.

Millions of baby-boomers crowded on the first rungs of management will be forced to stay put, says Landon Y. Jones, author of "Great Expectations," a new book analyzing the baby boom.

"A generation that had expected to be chiefs will have to be braves," says Mr. Jones. "In effect, the entire generation will be like a large group of people being moved from a big room into a smaller room."

Corporate executives, management consultants and business-school professors see the coming bulge of would-be managers as an extremely difficult problem for all concerned. "The aging of the baby-boom generation promises to create personnel problems in the 1980s such as U.S. industry has never faced before," says Arch Patton, a former McKinsey & Co. management consultant. Douglas T. Hall, management professor at Boston University, terms the situation "a corporate time bomb."

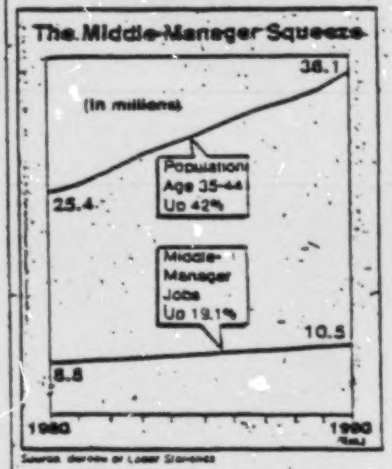
The new numbers "are unarguable and are disturbing," says Frank P. Doyle, senior vice president of General Electric Co.

No Room at the Middle

From 1980 to 1990, the number of persons 35 to 44 years old in the U.S., the prime "middle manager" candidate group, will increase to 36.1 million from 25.4 million, a 42% increase, U.S. demographers say.

Meanwhile the Bureau of Labor Statistics projects the number of jobs for managers and administrators to increase to 10.5 million in 1990 from 8.8 million in 1980, only a 21% gain.

The impact on employes will be "more stress, more burnout; more psychological withdrawal," says Kenneth R. Brousseau, a business professor at the University of Southern California. "If the backbone of the organization – middle management – gets turned off, it doesn't bode well for the future," says Mr. Hall. As a result, Mr. Brousseau sees a growth in militancy among employes not usually in the domain of organized labor. He thinks more professionals may join unions.


The Middle-Manager Squeeze

Source: Bureau of Labor Statistics

At some companies, the promotion slowdown is already occurring. At Continental Bank in Chicago, "It's starting to happen now," says Eugene R. Croisant, executive vice president. "Dissatisfaction sets in when a 31-year-old discovers that an old executive role model had a much bigger job at 31 than he can ever hope for."

Holding Pattern

General Electric Co. sees employes remaining in job assignments longer in certain divisions and not having the same chance to move upward that people once had. Lower-level managers are staying longer in the same jobs, the company says.

"At General Electric in the late 1950s or 1960s, promotions were so rapid, people had very little time to get bored with their jobs," says Mr. Doyle. Today that isn't true.

At Southern California Gas Co. in Los Angeles, a larger group is competing for fewer management opportunities, says J. Arthur Johnson, vice president for industrial relations. "We told people: 'go to school, study hard, work hard on your job and the sky's the limit.' That's not the case anymore. The truly superior performer is always in short supply. But the large group that's not quite that outstanding will have it tough."

If inflation continues at a high rate and older employes stay in management to the age of 70, the problem will be even more keen for the baby-boomers, says Lester Korn, chairman of Korn/Ferry International Inc., an executive-search firm. Power struggles could erupt in some corporations between young people eager for their chance at the reins and older executives clinging to their jobs, says Mr. Jones.

Baby-boomers are ready to climb the management ladder at an inopportune time for another reason, says Mr. Hall of Boston University. Many companies are streamlining and cutting back middle-management positions, he notes. Companies in depressed industries, Ford Motor Co. and General Motors Corp., for example, are reducing layers of management and enlarging responsibilities for those managers who are retained.

Of course, if fast-growing new-technology industries create huge numbers of new management positions, the problem might be ameliorated. But such companies need technical specialists and computer experts—not additional managers, says Robert Seibert, a futures analyst for Security Pacific National Bank in Los Angeles. Desk-top computers and office automation will make middle managers more efficient and eliminate the need for many of them, experts say.

Labor Department economist Max L. Carey projects that the number of professional and technical workers will increase by 30% from 1980 to 1990. This increase will clearly outstrip the 21% increase in managers and administrators during the same period. One result: Managers will decline from 9% of the labor force to 8.8% by 1990.

A big obstacle to coping with the oversupply of 30-year-old baby-boomers is the traditional way of looking at career success in America, Mr. Brousseau maintains. "In America, the notion of success is heavily oriented toward a linear career path," he says. "The common (belief) is that the only good move is a move upward. If you stay where you are or if, God help you, you take a position at a lower level, you are quickly seen as a failure."

To survive the baby-boom glut, companies are going to have to find new ways to reward employees and to define success, he and other management experts say. "The intelligent companies are already taking some steps in this direction," says Kirby Warren, director of Columbia University's Center for Research in Career Development.

In Chicago, Continental Bank is encouraging employees to move across departmental lines on a horizontal basis since management promotions are less frequent, says Mr. Crossant. "Someone from auditing might switch to commercial training; someone in systems research and development might move into international development," he says. "We're making changes and exceptions to the inflexible, hard-nosed personnel policies of former years."

Once a technical specialist moved up to a certain pay level at the bank, he had to move up to management in order to get a significant pay increase. Continental Bank has created new technical executive positions that are equal to management jobs in title and in dollars, he says. For example, the bank has created senior lending positions and accounting and systems specialist jobs equivalent to senior managerial posts in those departments.

In a survey of 23 companies, Boston University professor Hall found that personnel like a "technical ladder" of the sort being tried at Continental Bank, but they feel it sometimes is implemented poorly.

"Often the status of the technical 'executive' is seen as lower than that of the supposedly equivalent manager," Mr. Hall says. Also, the "perks"—office size, secretarial help—of the technical person often are inferior to those of the manager, he notes. And if there are very few people in the senior technical ranks, these positions are seen as "beyond reach." That "effectively kills the motivational impact" of the new jobs, Mr. Hall points out.

GE sometimes assigns "plateaued" employees to task forces or study teams. "They haven't been promoted in a hierarchical sense," says senior vice president Doyle. "But they've gotten a new assignment, a fresh perspective and a change in their daily work."

Prudential Life Insurance Co., in Newark, N.J., rotates managers to improve performance and tries the task-force approach to "recharge managers so they don't feel a loss of self worth if they don't move up as fast," says Eugene B. Heinberg, vice president for personnel.

Big Fish in a Big Pond

Some companies and business experts see a brighter side to the coming oversupply of potential middle managers. "I think it's a healthy thing," says E.L. McNeely, chairman and chief executive officer of Wickes Co., a San Diego-based diversified retailer. "The oversupply will increase competition and improve the quality of the middle-management group," he says. "Middle managers will study their art more and become better managers. We look forward to having a greater selection for top management."

Eric Flamholtz, professor of management at the University of California at Los Angeles, sees more and more business-school graduates becoming entrepreneurs and moving to smaller firms as they get fed up with waiting for advancement in big corporations.

"We'll see many managers filter down from large corporations to companies that never had professional management before," he says. Something similar already had happened in the academic world, Prof. Flamholtz says. With the oversupply of bright, young Ph.D.s, small colleges in out-of-the-way places who never had a Ph.D. from Harvard, Berkeley or Michigan suddenly found themselves with such big-league talent on their staffs, he says.

An attitudinal change may be occurring in some of the baby-boom generation that itself could help prevent conflict. A few companies and researchers cite evidence that the baby-boomers don't have the same desire to rise to the top in management that many of their predecessors had.

Facing Facts Squarely

General Electric is seeing "fairly good levels of job satisfaction even though we have longer tenure on jobs," says senior vice president Doyle. "We're seeing more interest in family and personal life among the baby-boom generation—and greater reluctance to transfer," he adds.

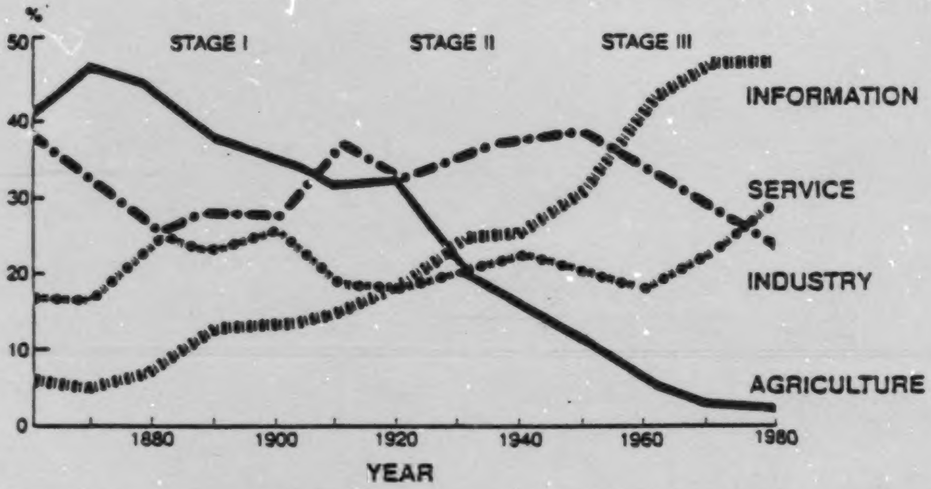
In a study comparing first-level managers of today with those of 20 years ago, American Telephone & Telegraph Corp., found that the managers of today don't have the same zeal to climb management ladders. Douglas W. Bray, AT&T's director of human-resources research, says today's generation "doesn't want as much and doesn't expect as much."

The AT&T study showed that 54% of the 1956-60 sample of young managers chose advancing to middle management as something they most wanted to accomplish. Only 34% of the 1977-78 sample checked that item on a wish list.

But GE's Mr. Doyle doesn't think that such an attitudinal change—if indeed it exists—will save corporations from the avalanche of baby-boomers. "Action is needed by companies," he says. "The issue is real."

The Four Sectors of the U.S. Labor Force by Percent 1860-1980

(using median estimates of information workers)



Source: Marc Porat, The Information Economy: Definition and Measurement, Office of Telecommunications Special Publication 77-12(1), May 1977.

Most people in the United States worked on farms less than 100 years ago, but now fewer than 4% of the American people work in that sector, largely because of advances in agricultural technology. Recently, automation in the manufacturing sector of the economy has reduced employment there, too, and more people are working in the service and information sectors. Employment patterns in these areas may soon change as microelectronic intelligence automates these jobs.

32 THE FUTURIST, February 1981

Monday, July 26, 1982 THE WASHINGTON POST

Increase in Working Women Leading Changes in the Work Place

THE FUTURE OF WORK

PART 2

The Numbers Will Redraw Labor's Face

By Thomas W. Lippman

Washington Post Staff Writer

The American work force is changing as dramatically as the American work place.

Within the next two decades, the 104 million people who do the jobs in this nation will, on the average, be older and better educated than those working today, and the proportions of females and blacks will be greater than they are now.

Workers will be less likely to be members of labor unions, more likely to live in rural areas and more likely to speak a language other than English at home.

These changes involve not small percentages, but tens of millions of people. Before the end of the century, they are likely to cause sweeping changes in work and business, affecting product development and marketing, the provision of services, education and training, and pension and health-care policy.

"Demographically, these are the most dramatic times in our history," says George J. Stolnitz, professor of economics at Indiana University, in a paper to be published by "Business' Horizons."

"They are also, almost surely, the most unpredictable and problematic. Major trends which can be traced back to our earliest records have, with small warning, reversed course or become altered beyond recognition, while others which have persisted have, paradoxically by that very fact, brought us to uncharted and clearly choppy waters."

Demographic analysts and labor experts agree that continued rapid growth in the number of working women will probably be the most significant change in the work force for the rest of the century. But they disagree on whether women by their very indispensability will achieve gains in salary and status, or will be driven by their very numbers into competition with each other, to their collective detriment.

Half of all American women of working age are already in the labor force, which means working or actively looking for work. Within the decade, the figure is expected to rise to at least 61 percent, and women will make up most of the growth in the overall labor force—a phenomenon with vast implications for work-place competition, demands for day care and flexible hours, and retirement benefits.

At the same time, the number of teen-agers and young people entering the labor force is plummeting. The "baby boom" generation now passing into maturity had far fewer children than their parents, and the number of people aged 16 to 24 will actually decline in the 1980s.

This will force employers who rely heavily on youth, such as the fast-food industry and the armed forces, to alter their mix of workers. It will force the producers of trend-dependent products, such as clothing and records, to change their styles. And it may, according to demographers, dramatically reduce the nationwide problem of youth unemployment—but probably not for blacks, whose ranks are not decreasing like those of whites.

According to the National Commission for Employment Policy, the "youth share" of the labor force is expected to decline from 23.5 percent to 18.4 percent during the decade of the 1980s.

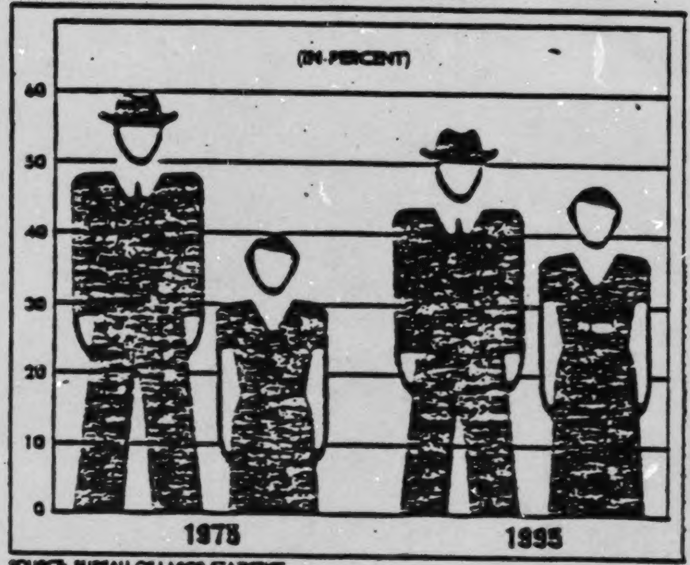
This, the commission says, "should make it easier for the current generation of young people to find jobs and prepare for adult work roles. It is not clear, however, whether the changing demographics will be of much benefit to the youths who have been most at risk. In particular, the numbers of black and Hispanic youths in the population and labor force are not expected to decline significantly during this period."

These dramatic changes are occurring simultaneously with a new revolution in the national economy that is demanding higher skills and special abilities in a high-technology work place. They also parallel other dramatic shifts in the population and work force whose implications are only dimly perceived:

- The population of rural counties, after decades of decline, grew in the 1970s at a rate equaled only in the 1850s. At least 3.5 million Americans moved out of urban and suburban communities into "nonmetropolitan areas" in the 1970s, and rural population experts expect the trend to continue. Interstate highways, electronic communications, the community college system, low land costs and a paucity of unions are making rural areas attractive to industry, and factory work is supplanting farming as the employment of much of the rural population.
- The trend toward early retirement among male workers slowed sharply in the 1970s, and some experts believe a new trend toward retiring later is about to develop. With inflation undercutting pensions and shortfalls in the Social Security fund causing doubts about retirement security, more workers are expected to stay on the job longer—especially since fewer young people are coming into the work force.
- In between, in the prime working years, are the children of the post-war baby boom, known to demographers as the "pig in the python" because they represent a vast, distorting bulge in the population as they pass through life. So great are

their numbers that demographer and labor experts foresee difficult years for them as they compete with each other for salaries, promotions, job status and work satisfaction in their prime earning years.

LABOR FORCE BREAKDOWN BETWEEN MEN AND WOMEN



SOURCE: BUREAU OF LABOR STATISTICS

In 1975, according to the Bureau of Labor Statistics, there were 16.7 million men and women in the work force aged 35 to 44. By 1995, BLS projects that the number will be at least 33.7 million.

"In this decade these folks will be competing for promotion and advancement not only with themselves but with their fathers and uncles who are deferring retirement," said Jerome M. Rosow, president of the Work in America Institute.

Unlike the preceding generations, who were children of immigrants and survivors of the Great Depression, the workers of the postwar era have not rushed into labor unions.

At the end of World War II, more than a third of all nonfarm workers were members of unions. By 1978, according to Martha Riche, associate editor of American Demographics magazine, the ratio had dropped to less than a fourth.

According to Riche and other analysts, current labor trends do not favor unions. Decentralization of industry, an aging and better-educated population, an increase in part-time employment and the proliferation of small businesses—the primary source of new jobs—combined to discourage union organization.

The unions, according to Riche, failed to respond to the great growth of female employment, partly because the sectors of the economy where unions are strongest, such as manufacturing, mining and transportation, are those most dominated by male workers.

Demographers say that work-force trends can be predicted with accuracy because everybody who will be working in the 1990s has already been born. But they acknowledge that their projections omit the one great imponderable that will affect labor and industry in the coming decades, immigration. About 400,000 immigrants enter the United States legally each year. But there are also an estimated 3.5 to 6 million illegal immigrants, and their ranks are growing by an estimated 400,000 to 500,000 a year.

The current rate of legal immigration alone could add 12 million persons to the population by the end of the century, demographers say. The ranks of illegal immigrants and refugees are likely to swell the work force still further, though the overall impact that would have on the job market is unclear.

Charles B. Keely, immigration and refugee policy analyst at the Population Council in New York, said the unanswered questions about the flow of aliens into the country include these:

What will be U.S. policy on admitting refugees as political upheavals continue in Asia, Africa and the Caribbean?

What will be the impact on industry if Congress enacts pending legislation to revamp the immigration laws and jail employers of illegal aliens?

Could the economy continue to function if all the illegal aliens were deported?

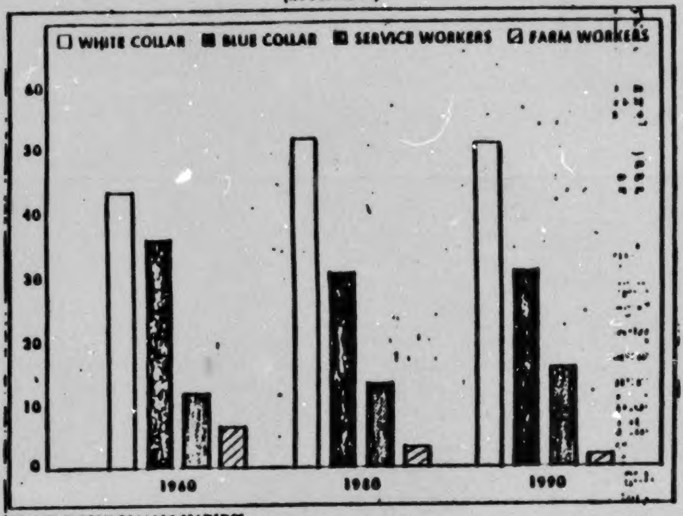
"Are they really deportable?" he asked. "Would Americans do those jobs?"

Some industries, such as agriculture, food services and garment manufacturing, are virtually dependent on illegal immigrant labor, he said, and without it either would have to find other sources of low-cost labor or raise wages and improve working conditions.

Some industries have begun to start thinking about the implications of the changes in the work force.

William Daly, former vice president for planning at Amtrak, for example, said the railroads are contemplating a future in which "there will not be a supply of workers who want to spend most of their adult lives away from their families." The railroads, he said, "will have to develop technology that will minimize the

DISTRIBUTION OF WORK FORCE
(IN PERCENT)



SOURCE: BUREAU OF LABOR STATISTICS

need for workers to stay away—that is, nobody up in front."

Keith Wardell, a consultant to the convenience-store industry, said stores such as 7-Eleven "are seeing a very dramatic change in their customer profile." More and more customers, he said, are "working females and those over 50," who have more money and shop less often than the young, single customers who predominated in the past.

These new customers demand a more sophisticated mix of products, he said, and that in turn requires a more mature, better-trained staff. "That drives up labor costs," he said, "which means you have to sell more higher-priced items. It's a spiral."

Many demographic specialists, however, say that industrial planners have only begun serious scrutiny of the trends, and in particular of the most dramatic change of all, the growth of female employment.

Not only are more women working, they are staying in the labor force longer and bringing higher [illegible]

Women still earn on the average only 60 cents for every dollar earned by men—a relative value first dictated by God to Moses in the Book of Leviticus—but some analysts believe their increased education and "on the job training" will move them toward equality.

Women may find greater opportunities in new industries such as computers and electronics where physical endurance is not required and traditional patterns of male dominance are not so entrenched.

But other experts say that women have failed to move out of jobs they traditionally have held; sexual integration of the work place is occurring more as a result of the movement of males into such occupations as nurse and telephone operator than the other way around. Thus women may fall further behind because of greater competition.

In addition, many working women have young children, and may find opportunities for advancement limited by lack of day-care facilities.

PROJECTED NUMBER OF NEW JOBS BY OCCUPATION 1980-90

(IN THOUSANDS)	
SECRETARIES	699.6
NURSES AIDES AND ORDERLIES	507.6
JANITORS AND SEXTONS	501.2
SALES CLERKS	479.3
CASHIERS	452.0
PROFESSIONAL NURSES	437.4
TRUCK DRIVERS	415.2
FOOD SERVICE WORKERS, FAST FOOD RESTAURANTS	399.9
GENERAL CLERKS, OFFICE	377.4
WAITERS AND WAITRESSES	360.3
ELEMENTARY SCHOOL TEACHERS	250.9
KITCHEN HELPERS	231.2
ACCOUNTANTS AND AUDITORS	220.6
HELPERS, TRADES	212.2
AUTOMOTIVE MECHANICS	206.3
BLUE-COLLAR WORKER SUPERVISORS	205.7
TYPISTS	187.0
LICENSED PRACTICAL NURSES	185.2
CARPENTERS	173.2
BOOKKEEPERS, HAND	167.2

SOURCE: BUREAU OF LABOR STATISTICS

PERCENT GROWTH IN EMPLOYMENT BY OCCUPATION 1980-90

PARALEGAL PERSONNEL	108.9
DATA PROCESSING MACHINE MECHANICS	93.2
COMPUTER OPERATORS	71.6
COMPUTER SYSTEMS ANALYSTS	67.8
OFFICE MACHINE AND CASH REGISTER SERVICERS	59.8
PHYSICAL THERAPISTS	50.9
FOOD SERVICE WORKERS, FAST FOOD RESTAURANTS	49.6
COMPUTER PROGRAMMERS	48.9
TAX PREPARERS	48.6
EMPLOYMENT INTERVIEWERS	47.0
SPEECH AND HEARING CLINICIANS	46.6
CORRECTION OFFICIALS AND JAILERS	46.8
PERIPHERAL EDP EQUIPMENT OPERATORS	44.0
AERO-ASTRONAUTIC ENGINEERS	43.4
TRAVEL AGENTS AND ACCOMMODATIONS APPRAISERS	43.4
NURSES AIDES AND ORDERLIES	43.2
CLAIMS EXAMINERS, INSURANCE	43.0
ECONOMISTS	42.0
BRICKMASONS	40.2
PSYCHIATRIC AIDES	39.9

SOURCE: BUREAU OF LABOR STATISTICS

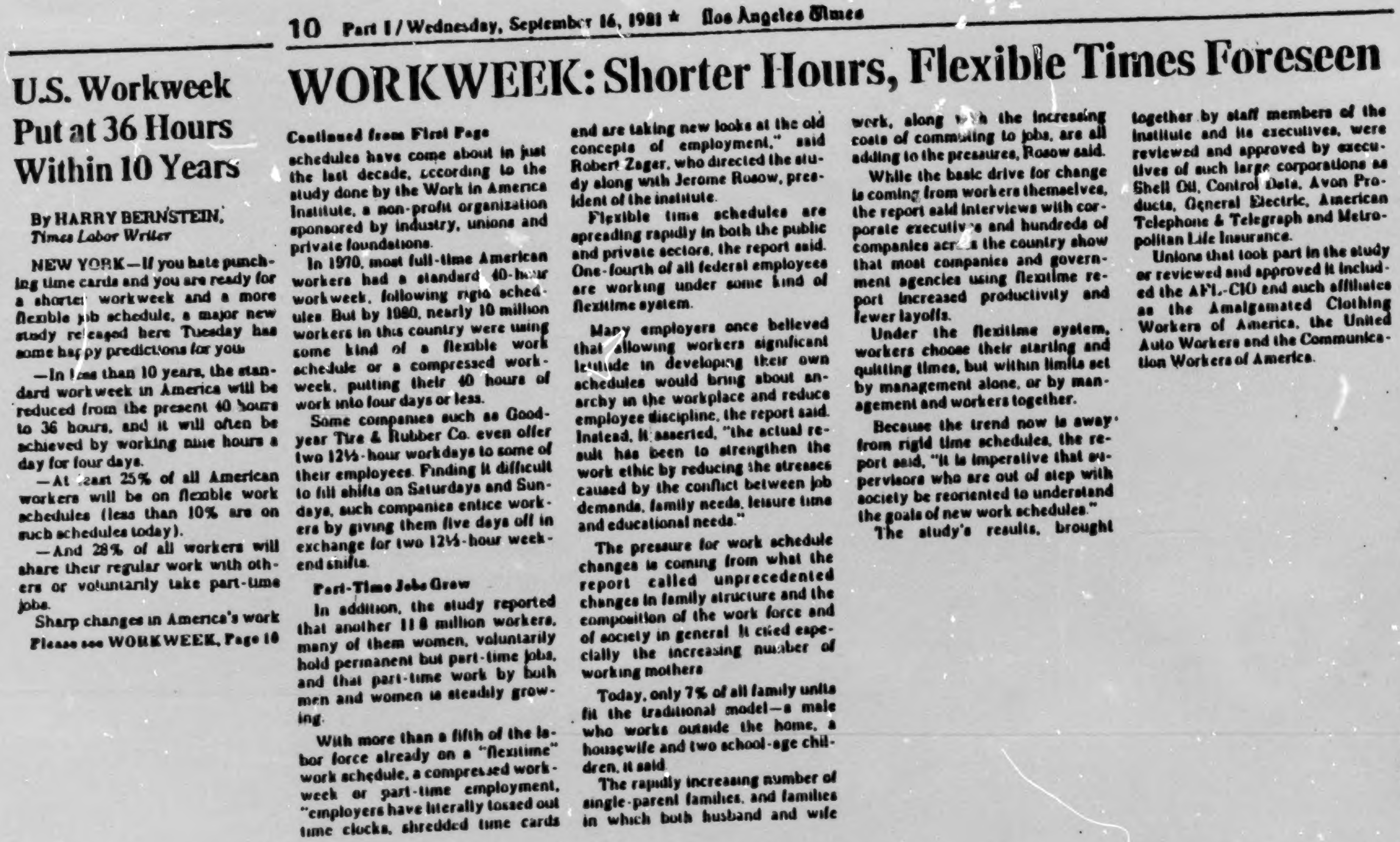
By Gail McCrory — The Washington Post

"Many women with young children," according to the Population Resource Center, "cannot conform to traditional job structures, creating the necessity for flexible work patterns and day-care facilities. The current demand for child care is 16 billion hours per year, yet there are fewer facilities now than there were in 1945."

Since more women are in the work force on a long-term basis, the current system of pension and health benefits in many firms is obsolete because it is based on vanished patterns of family life, experts say.

Stephen Sandell, an analyst at the National Commission for Employment Policy, predicts that by 2000 as many as 80 percent of women reaching the age of 65 will qualify for retirement benefits on the basis of their own earnings. Since women live longer than men, pension funds may have inadequate resources.

The Employe Benefits Research Institute, reporting the results of a forum on these issues, said that "conventional benefit plans and entitlement programs are no longer efficient" in an economy increasingly dominated by single and divorced persons and working women.



U.S. Workweek Put at 36 Hours Within 10 Years

By HARRY BERNSTEIN,
Times Labor Writer

NEW YORK—If you hate punching time cards and you are ready for a shorter workweek and a more flexible job schedule, a major new study released here Tuesday has some happy predictions for you:

—In less than 10 years, the standard workweek in America will be reduced from the present 40 hours to 36 hours, and it will often be achieved by working nine hours a day for four days.

—At least 25% of all American workers will be on flexible work schedules (less than 10% are on such schedules today).

—And 28% of all workers will share their regular work with others or voluntarily take part-time jobs.

Sharp changes in America's work

Please see WORKWEEK, Page 10

WORKWEEK: Shorter Hours, Flexible Times Foreseen

Continued from First Page

schedules have come about in just the last decade, according to the study done by the Work in America Institute, a non-profit organization sponsored by industry, unions and private foundations.

In 1970, most full-time American workers had a standard 40-hour workweek, following rigid schedules. But by 1980, nearly 10 million workers in this country were using some kind of a flexible work schedule or a compressed workweek, putting their 40 hours of work into four days or less.

Some companies such as Goodyear Tire & Rubber Co. even offer two 12½-hour workdays to some of their employees. Finding it difficult to fill shifts on Saturdays and Sundays, such companies entice workers by giving them five days off in exchange for two 12½-hour weekend shifts.

Part-Time Jobs Grow

In addition, the study reported that another 11.8 million workers, many of them women, voluntarily hold permanent but part-time jobs, and that part-time work by both men and women is steadily growing.

With more than a fifth of the labor force already on a "flexitime" work schedule, a compressed workweek or part-time employment, "employers have literally tossed out time clocks, shredded time cards and are taking new looks at the old concepts of employment," said Robert Zager, who directed the study along with Jerome Rosow, president of the institute.

Flexible time schedules are spreading rapidly in both the public and private sectors, the report said. One-fourth of all federal employees are working under some kind of flexitime system.

Many employers once believed that allowing workers significant latitude in developing their own schedules would bring about anarchy in the workplace and reduce employee discipline, the report said. Instead, it asserted, "the actual result has been to strengthen the work ethic by reducing the stresses caused by the conflict between job demands, family needs, leisure time and educational needs."

The pressure for work schedule changes is coming from what the report called unprecedented changes in family structure and the composition of the work force and of society in general. It cited especially the increasing number of working mothers.

Today, only 7% of all family units fit the traditional model—a male who works outside the home, a housewife and two school-age children, it said.

The rapidly increasing number of single-parent families, and families in which both husband and wife work, along with the increasing costs of commuting to jobs, are all adding to the pressures, Rosow said.

While the basic drive for change is coming from workers themselves, the report said interviews with corporate executives and hundreds of companies across the country show that most companies and government agencies using flexitime report increased productivity and fewer layoffs.

Under the flexitime system, workers choose their starting and quitting times, but within limits set by management alone, or by management and workers together.

Because the trend now is away from rigid time schedules, the report said, "it is imperative that supervisors who are out of step with society be reoriented to understand the goals of new work schedules."

The study's results, brought together by staff members of the institute and its executives, were reviewed and approved by executives of such large corporations as Shell Oil, Control Data, Avon Products, General Electric, American Telephone & Telegraph and Metropolitan Life Insurance.

Unions that took part in the study or reviewed and approved it included the AFL-CIO and such affiliates as the Amalgamated Clothing Workers of America, the United Auto Workers and the Communication Workers of America.

FACTORS THAT INFLUENCE THE LOCATION CHOICES OF HIGH TECHNOLOGY COMPANIES WITHIN REGIONS

RANK	ATTRIBUTE	PERCENT SIGNIFICANT OR VERY SIGNIFICANT
1	AVAILABILITY OF WORKERS:	
	TECHNICAL	96.1
	SKILLED	88.1
	PROFESSIONAL	87.3
	UNSKILLED	52.4
2	STATE AND/OR LOCAL GOVERNMENT TAX STRUCTURE	85.5
3	COMMUNITY ATTITUDE TOWARD BUSINESS	81.9
4	COST OF PROPERTY AND CONSTRUCTION	78.8
5	GOOD TRANSPORTATION FOR PEOPLE	76.1
6	AMPLE AREA FOR EXPANSION	75.4
7	PROXIMITY TO GOOD SCHOOLS	70.8
8	PROXIMITY TO RECREATIONAL AND CULTURAL OPPORTUNITIES	61.1
9	GOOD TRANSPORTATION FACILITIES FOR MATERIALS & PRODUCTS	56.9
10	PROXIMITY TO CUSTOMERS	46.8
11	AVAILABILITY OF ENERGY SUPPLIES	45.6
12	PROXIMITY TO RAW MATERIALS & COMPONENT SUPPLIES	35.7
13	WATER SUPPLY	35.3
14	ADEQUATE WASTE TREATMENT FACILITIES	26.4

SOURCE: DR. ROBERT PREMUS
JOINTECONOMIC COMMITTEE
U.S. CONGRESS

Canadian List

SUMMARY OF GENERIC SKILLS*

Mathematics Skills (11 areas; 34 skill areas; 192 sub-divisions of skills)

1. *Whole numbers:* Read, write, and count; add and subtract; multiply and divide; word problems; round off
2. *Fractions:* Read and write; add and subtract; multiply and divide; word problems
3. *Decimals:* Dollars and cents; read, write and round off; multiply and divide; add and subtract; word problems
4. *Percent:* Read and write; ratio; proportion; percentage; rate; principle
5. *Mixed operations:* Equivalents; order of operations; word problems; quick calculations; average
6. *Measure:* Read graduated scales; read verniers; time; weight; distance; capacity
7. *Metric measure:* Weight; distance; capacity; weight conversion; distance conversion; capacity conversion
8. *Geometric figures:* Forms and figures; angles; draw, sketch; perimeters; areas; volumes
9. *Drawings and graphs:* Read graphs; read scale drawings; read assembly diagrams; read schematic drawings; draw graphs; measure from scale drawings; draw to scale
10. *Algebra:* Single variable, open sentences; single variable, powers and roots; solve given formulas; integers and rationals; variables and expressions; two variable, open sentences; quadratics
11. *Calculations:* Logs; slide rule; trigonometry calculations; calculator

Communications Skills (7 areas)

12. *Words:* Plurals; prefixes, suffixes, and root words; contractions and abbreviations; dictionary; synonyms, antonyms, and homonyms; meaning and context; books
13. *Listen:* Literal comprehension; interpretive comprehension; evaluative comprehension
14. *Talk:* Pronunciation; diction and word choice; fluency; organization of ideas; ask 6W questions; give information and directions; use telephone
15. *Read I:* Literal comprehension; interpretive comprehension; evaluative comprehension
16. *Read II:* Forms, notes; letters or memos; charts and tables; manuals; Roman numerals X; Roman numerals XXX; Roman numerals M
17. *Write I:* Phrases on forms; sentences on forms; paragraphs on forms; sentences; paragraphs; short notes; take notes
18. *Write II:* Form letters; single paragraph letters; internal memos; business letters; information reports; recommendation reports; technical reports

Interpersonal Skills (7 areas)

19. *Attending behaviors:* Physical; cognitive; reactive; covert
20. *One to one conversation:* Elementary conversation; task focused conversation; express own point of view; personable conversation; persuasive presentation

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* Kawula, H.J. & Smith, A. DeW. *Generic skills: Handbook of occupational information.* Prince Albert, SK: Canada Manpower and Immigration Department, Training Research and Development Station, 1975.

21. *Group discussion:* Preparation; presentation of information or directions; control group decision making; group maintenance; participate in group discussion; respond to information or directions; persuasive presentation
22. *Oral presentations:* Preparation; factual information; listen, respond; conceptual; persuasive; reactive
23. *Instructional communication:* Establish training; instruction; demonstration; monitor; evaluate
24. *Supervisory communication:* Give directions; demonstrate; give praise; give discipline; prepare evaluation reports
25. *Interview/counsel communication:* Preparation; closed questions; open questions; confrontation; interview job applicants; negotiate

Reasoning Skills (9 areas)

26. *Obtain job related information:* Tools, materials, and equipment; methods and procedures; sequence; other information; theories
27. *Organize information:* Sort objects; sort data; rate; rank; develop classifications
28. *Estimate:* Time, weight; distance; area; capacity; cubic measures; costs
29. *Tasks:* Sequence; priority
30. *Objectives and methods:* Goals; activities; alternatives; criteria; priority; analysis; deduction
31. *Diagnosis:* Cause and effect relationships; possible problems; priorities; possible methods; probing questions; use senses
32. *Problem solving:* Relevant information; alternative statements; select statement; alternative solutions; select alternative
33. *Plan and coordinate:* Activities and sequences; outline plan; identify resources; estimate resources; critical activities; detailed plan; resource requisitions
34. *Implement work:* Monitor results; standards of quality; standards of quantity; standards of completion time; priorities of standards; authority and responsibility; update plans

STATE LEVEL ACADEMIC PROGRAM REVIEW AND APPROVAL: 1984 UPDATE

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STATE LEVEL ACADEMIC PROGRAM REVIEW AND APPROVAL:

1984 UPDATE

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Introduction

The last two decades have witnessed the development and expansion of statewide governing and coordinating boards for higher education in nearly every state. This development was spurred on in the 1970s by the federal government's role in fostering the development of the so-called "1202" Postsecondary Educational Planning Commissions (McGuinness et al., 1975). The specific responsibilities of the state boards for higher education vary from state to state, but, in general, three major areas have been identified in which most boards have some responsibility. These three areas are budget development, planning, and program review and approval (Berdahl, 1971, and Glenny et al., 1971). Of the three areas, program review and approval, because of its close relationship with the academic function of colleges and universities, has been the most controversial. Earlier studies of state-level program review and approval have noted this controversy and reported the status of state-level review and approval activities (Barak and Berdahl, 1978; Barak and Engdahl, 1980; and Barak, 1979). More recently, several national commissions have addressed the issue of state-level academic program review, thus highlighting this function of state higher education boards (i.e., National Commission on Higher Education Issues, 1982; Education Commission of the States, 1980; Sloan Commission on Government and Higher Education, 1980; Carnegie Foundation for the Advancement of Teaching, 1982). This report represents a 1984 update on the status of state-level academic program review and approval.

Past Surveys

In 1978, a comprehensive report on the status of state-level academic program review and approval described, for the first time, the nature and extent of the program review and approval activities of state higher education boards (Barak and Berdahl, 1978). The report noted that in 1975, 47 state boards had

had authority to approve at least some new programs or had authority to review at least some existing programs. With few exceptions, this authority was directed primarily at public colleges and universities. In eight states, this authority was limited to making recommendations to appropriate officials (i.e., the governor, legislature, and institutional boards of trustees and/or officials). In the remaining state boards that had authority for program review and/or approval it was possible for the boards to actually disapprove new programs and/or discontinue existing programs.

Five National Panels Recommend Program Review

Since the Barak and Berdahl study, at least five national panels have addressed the role of the states, and particularly state higher education boards, in program review and approval. While all five were highly supportive of the need for systematic program review, four reports felt that the appropriate focus of this activity should be at the institutional level, while one suggested that the reviews be a cooperative endeavor between the state boards and the institutions. The latter, a panel convened by the Education Commission of the States in 1980, after examining the problems and issues facing the states in the 1980s, concluded that:

> *With variable enrollments and fiscal stringency, review of existing as well as review of new programs will become progressively important. In some states program review needs to be strengthened and related to the entire planning, budgeting and coordinating process. A fragmented and ad hoc approach will not be helpful in protecting educational values in a period of decline.*
>
> > *1. Program review can help to keep postsecondary education vital by encouraging curtailment or closure of programs that no longer serve student needs and by helping the development of needed new programs. Effective program review must involve both the state higher education agencies and the institutions and combine institutional and statewide perspectives. It should be clearly related to institutional missions.*

> - *For the 1980s proposals for new programs should be carefully developed by the institutions and their planning staffs with special attention to needs, costs and resource reallocation. The state agency should relate program review to state as well as to institutional objectives and thus to the planning process.*
>
> - *Review of existing programs, which will receive increased attention during this decade, should incorporate both qualitative and quantitative dimensions of student need, program duplication and program effectiveness. In light of the deeply engrained reliance in the academic community on peer group evaluation for qualitative judgments, where feasible and possible, careful use of outside consultants should be considered.*
>
> *2. Program review needs to be developed through the participation of institutions and their faculty and of the statewide higher education agency and with the cooperative reinforcement of the legislative and executive branches of state government. The importance of a state perspective does not mean that the state should carry out academic program review unilaterally. Institutional and faculty cooperation is essential to the integrity of the review process and to the coordination of state and institutional efforts.*
>
> - *The criteria for program review should be developed jointly by state higher education agencies and institutions. Criteria should be thoroughly understood by administrators, faculty and other interested parties including the executive and legislative branches of state government. The process should be as objective as possible and include conditions for appeal and review.*
>
> - *When possible, independent institutions should be given the opportunity and should be encouraged to participate voluntarily in the program review process.*
>
> - *Program review should be based on the premise that it is a way to enhance the qualify of education as well as a way of controlling costs. However, program review is limited by costs, so careful consideration must be given to a credible process for the selection of programs for review. (Education Commission of the States, 1980, p. XV.)*

While the direct involvement of state boards in the program review process was not encouraged by four other national panels composed primarily of representatives of college and universities, there was some recognition that state-level action might be needed in certain circumstances such as large expensive programs and to encourage by various means systematic reviews at the institutions. The Carnegie Council, in its final report, suggested that:

> *We are doubtful about state-mandated review of academic programs. We believe that such review is better conducted by the institutions themselves, by the accrediting agencies, and by the students making their choices; and we question the wisdom of this great an intrusion into academic affairs. While we are against any fine-tuning of academic programs by state action, we recognize that the state may need to step in where there are very expensive large programs (like medical schools) in severe duplication of each other. (Carnegie Council on Higher Education, 1980, p. 124.)*

The Sloan Commission, while noting many of the difficulties facing higher education concluded that

> *The commission recommends that each state arrange for a periodic review of the quality of educational programs at every public college and university within the state. The reviews should be conducted by academic peer groups, not by state employees. To the greatest extent possible, existing accrediting mechanism, such as the regional and professional accrediting associations, should be drawn on to organize and conduct the reviews.*
>
> *Any governmental effort, whether state or federal, to evaluate the quality of education arouses profound uneasiness throughout the higher education community. It is seen as a threat to institutional autonomy and academic freedom. (Sloan Commission on Government and Higher Education, 1980.)*

The National Commission on Higher Education Issues sponsored by the American Council on Education also urged state boards to encourage rigorous institutional program reviews while spelling out a partnership role for state board staff. Specifically, the National Commission recommended

> *". . . that governing boards ensure that all institutions under their jurisdiction have in place procedures for systematic program evaluation. Coordinating agencies should, appropriately, see that all public institutions and those independent institutions which receive direct state support subject their programs to a rigorous process of evaluation. The actual program evaluations should, however, be conducted at or before the level of the institutional governing board and should include extensive peer group judgments.*
>
> *Staffs of statewide coordinating boards and other public agencies concerned with higher education can, by wise and diplomatic prodding, become important components of the educational governance structure. Thus, their staff members should be selected and compensated as befits their important role. They should then be treated by university and college leaders in an open and informative fashion as partners rather than as adversaries. (The Carnegie Foundation for the Advancement of Teaching, 1982, p. 81)*

The Carnegie Foundation for the Advancement of Teaching took a similar position to that of the National Commission in its recommendations

> *State officials have generally respected the independence of the campus. Today, however, under the pressure for accountability, the trend is in the opposite direction. Some state agencies have become deeply involved in educational matters, including the evaluation of academic programs (p. 80).*
>
> *In academic matters, the integrity of the campus should be fully protected. State officials should not involve themselves directly in the review of academic programs. Rather, they should call upon higher-learning institutions periodically to assess such programs and report their findings (The Carnegie Foundation for the Advancement of Teaching, 1982, p. 81).*

The Present Findings

In July 1983, a survey was distributed to the state higher education boards that are members of the State Higher Education Executive Officers (SHEEO) for the purpose of ascertaining the current nature and extent of authority of these boards in academic program review and approval. Surveys were sent to all current SHEEO members and responses were received from all but four of these states.*

Three major trends emerge from the survey results. First, there has been an expansion of state higher education board activity and/or authority in program reviews and approval, resulting in an overall increase in state-level program review activity. Secondly, the reviews themselves have become more comprehensive and systemic. Third, the reviews of existing programs appear to be more closely integrated into the planning and budgeting activities of many of the state boards.**

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* Information on program review and approval was subsequently obtained through follow-up efforts about the situation in non-responding states.

** It should be noted that in a recent separate study or program review at the institutional level, the author found similar trends. (See Barak, 1982.)

Approximately one quarter of the states reported that their activities and/or authority in the area of program review and/or approval have expanded in recent years. In some states where the board previously had authority for program review but had not exercised it, reviews were now taking place or were under consideration. In other states, new authority for review has been given to the state board. Consequently, the nature of the expansion varies on a continuum ranging from increased attention to the review and approval function to new or expanded statutory authority. Among the reasons given for this expansion of activity were the following:

1. Concerns about academic quality.
2. Desire for greater accountability.
3. Greater financial restraints requiring the careful distribution and redistribution of scarce resources.
4. Need for greater flexibility in retrenchment.

The typical rationale for the expansion of program review activity is perhaps best illustrated by quotations from actual state documents. The recommendations of a study panel in the state of Georgia illustrates the concerns about academic quality and the desire for greater accountability.

> *QUALITY*
>
> *The most important task facing the University System in the eighties and beyond is the improvement of the quality of public higher education. The success of the System in the sixties and seventies was often measured by one factor -- growth. To meet dramatic increases in enrollment, programs, facilities, and institutions were added with alacrity. The success of the System in the years ahead will be measured not in terms of growth but in terms of the level of quality by which Georgia's citizens are provided with the knowledge and expertise necessary to address critical social, economic, and technical problems. Each decision made by the Board of Regents must be governed by the principle of quality improvement. The University System must develop the means of evaluating the performance of its institutions against those standards that have been identified as the best nationally.*

While adequacy of funding will play an important role in the attainment of an increased level of quality, funding alone is not the only component of a needed program of quality improvement.

The coordinating Committee for the Statewide Needs Assessment recommends that:

- *the Governor, the Legislature, and the Board of Regents establish quality improvement as the top priority for public higher education in the state for the eighties and beyond and that this priority be made known to the citizens of the state; that, in so doing, the quality improvement funding recommendations of the Study Committee on Public Higher Education Finance be adopted and implemented.*

- *the Board of Regents and the State Board of Education expand the present base of cooperation into a wide-ranging creative partnership to examine issues of mutual concern and to develop strategies aimed at the development of excellence in all areas of the educational endeavor; that local school systems and units of the University System develop a systematic mode of communication, allowing frequent exchange of ideas and information and designed to enhance the interdependence of the levels of education they represent.*

- *University System institutions further develop creative partnerships with local community, business, and industrial leaders to ensure their acquaintance with the problems and potential of each instutution and the System, their knowledgeable advocacy of public higher education, and their participation in the formulation of institutional and System goals; that these groups be encouraged to assist the institutions in obtaining private funding support which often spells the difference between adequacy and excellence.*

- *the Board of Regents develop and implement a system of program evaluation for institutional and System-wide utilization, with the establishment of specific qualitative criteria which lend themselves to measurement; that this system of program evaluation be designed to involve both internal and external evaluation to ensure results that are both disinterested and objective.*

- *the Board adopt as a long-range goal the elimination of the need for Developmental Studies as that program is currently constituted; that this goal be adopted with the understanding that the results of past deprivation of educational opportunity will long remain and that the need for compensatory education must be met so long as necessary in order not to block access to higher education for those who are capable of eliminating academic deficiencies for which they may not be totally responsible; that close cooperation with the State Board of Education be made the cornerstone for achievement of this goal, recognizing that academic problems are best addressed as they develop, not after-the-fact.*

- *the Board encourage the reinstitution of specific academic requirements for admission to System institutions to include emphasis on laboratory sciences, foreign languages, mathematics, and writing skills; that the public be made more clearly aware of achievement expectations at the entrance level.*
- *the Board develop and fund a program of System-wide faculty development designed to ensure that faculty members have adequate opportunity to keep up-to-date in their disciplines and to enhance their teaching skills.*

The concerns about quality and accountability are also evident in the quote below from the report and recommendations of a group of consultants engaged to evaluate the Alabama Commission on Higher Education. In addition, this example notes a concern frequently noted elsewhere in which the lack of accountability on the part of colleges and universities (and their respective boards) in undertaking their own rigorous program reviews provides a convenient rationale for others located outside the institutions to take the initiative on the reviews. After noting that the process of program approval (i.e., the review of new programs) is working reasonable well in Alabama, the consultants explain their rationale for a greater commission role in program review.

> *Program Review and Evaluation*
>
> *Program evaluation rarely is a simple matter. The process in which a new program begins within the faculty of an institution, moves through peer review, passes administrative scrutiny and board approval, and then is subjected to approval by a statewide commission may reflect several different sets of needs and standards. At each step judgement is made more cautious by the propsect of review. On the whole the system seems to work well in Alabama.*
>
> *There is far less rationality in the review of existing programs. Most programs serve well because they are kept up to date by faculty interest and an occasional change of course title. Many die quietly for lack of students. Others linger on without much enthusiasm or notice. It is the spectre of those few persistent and marginal courses and programs which disturbs everyone when resources are scarce and needs are great. Thus far the trustees of the institutions have not given the public reason to believe that they are dealing with the problem satisfactorily.*

> *The Alabama Commission is charged with "The use of advisory committees to study needless duplication of education, research, or service programs, and programs which are not adequately provided in the state . . ." Its reports are to go to the institutions, the Governor and the Legislature. New programs are likely to be identified in the planning process through the Council of Twenty-One and other groups. For the Commission to live up to its legislative mandate and for the system to be credible in its stewardship, review of programs which may be unnecessarily duplicating or unproductive needs to be made. The Committee recommends that*
>
> > *THE COMMISSION SHOULD ESTABLISH A PROCESS TO REVIEW EXISTING PROGRAMS AND REPORT ITS FINDINGS TO THE INSTITUTIONS, THE GOVERNOR AND THE LEGISLATURE, AND TO THE PUBLIC.*

A third example is indicative of those states where programatic duplication, generally referred to as "unnecessary duplication," has been a focus of concern. In 1979, the Kentucky Council on Higher Education resolved that a committee should be formed to examine the trends and issues likely to affect Kentucky higher education in the future. In 1981, the committee established for this purpose issued its report In Pursuit of Excellence. The report contained a number of recommendations, several of which were concerned with program review issues. With respect to both Master's and Doctoral programs, recommendations were aimed at ". . . giving specific attention to the identification of program duplication" (p. 65). The report noted that:

> *In the absence of strong evidence that the duplication of a program is "necessary," the Council should declaire it to be "unnecessarily duplicative" and, in the case of a requested new program, deny its approval. In the case of an existing program that is declared to be "unnecessarily duplicative," the Council should withdraw approval, and the institution affected should accept no new students into the program and terminate it when enrolled students have completed their studies (p. 66).*

Program Review

Program review of existing academic programs by state higher education boards has grown from only a handful of states in 1960 to forty-three (43) boards in 1983. In addition, there are several state higher education boards that have authority in this area but have not fully exercised that authority to date.

Table 1 shows the number of SHEEO agencies that have authority to recommend and actually discontinue academic programs by sector and type of institution. Sixteen (16) boards have authority for making recommendations for public two-year and four-year institutions, and eighteen (18) for public universities. Only one (1) state has authority to recommend with respect to all independent institutions, and two (2) have recommending authority with respect to some independent institutions.

Table 1

AGENCY PROGRAM REVIEW OF
AT LEAST SOME EXISTING ACADEMIC PROGRAMS
AS OF JULY 1, 1983

RECOMMEND ONLY					APPROVE				
PUBLIC			INDEPENDENT		PUBLIC			INDEPENDENT	
2 YR.	4 YR.	UNIV.	ALL	SOME	2 YR.	4 YR.	UNIV.	ALL	SOME
16	16	18	1	2	21	22	23	1	3

The authority to actually discontinue at least some programs exists in twenty-one (21) states for public two-year institutions, and twenty-two (22) for public four-year institutions. Twenty-three (23) states have authority to discontinue public university level programs. Discontinuance authority over the independent sector is limited to three (3) states with authority to discontinue programs at some institutions, and only one (1) with authority to discontinue programs at all institutions in the state. The states with recommending and discontinuance authority over at least some programs are shown in the map in Figure 1. Figure 2 shows states with authority to review at least some programs in independent institutions.

Program Approval

Program approval is the process by which new programs are proposed and approved or recommended for approval by state postsecondary education agencies. In 1960, there were twenty-four (24) state higher education boards that had at least some program approval authority. In 1983, there were forty-seven (47) state boards that had at least some program approval authority, almost doubling the number in 1960.

Table 2 shows a breakdown of the SHEEO agencies' authority for program approval of at least some academic programs. Seven (7) agencies have authority to recommend approval for public two-year and four-year institutions, and eight (8) have authority for making recommendations for universities. Two (2) states have authority to recommend approval for all independent institutions, and two (2) for some independent institutions. Generally, such authority means that the state higher education board can recommend approval to some other body (i.e., legislature, governing board, etc.).

Approval authority for public institutions exists in thirty-four (34) states for two-year and four-year institutions and in thirty-nine (39) states for universities. Four (4) states have authority to approve new programs for all independent institutions and an additional nine (9) states have authority to approve only some new programs for independent institutions. Usually, the

FIGURE 1

SHEEO STATES WHERE AGENCY HAS AUTHORITY TO RECOMMEND DISCONTINUANCE OR TO DISCONTINUE AT LEAST SOME ACADEMIC PROGRAMS

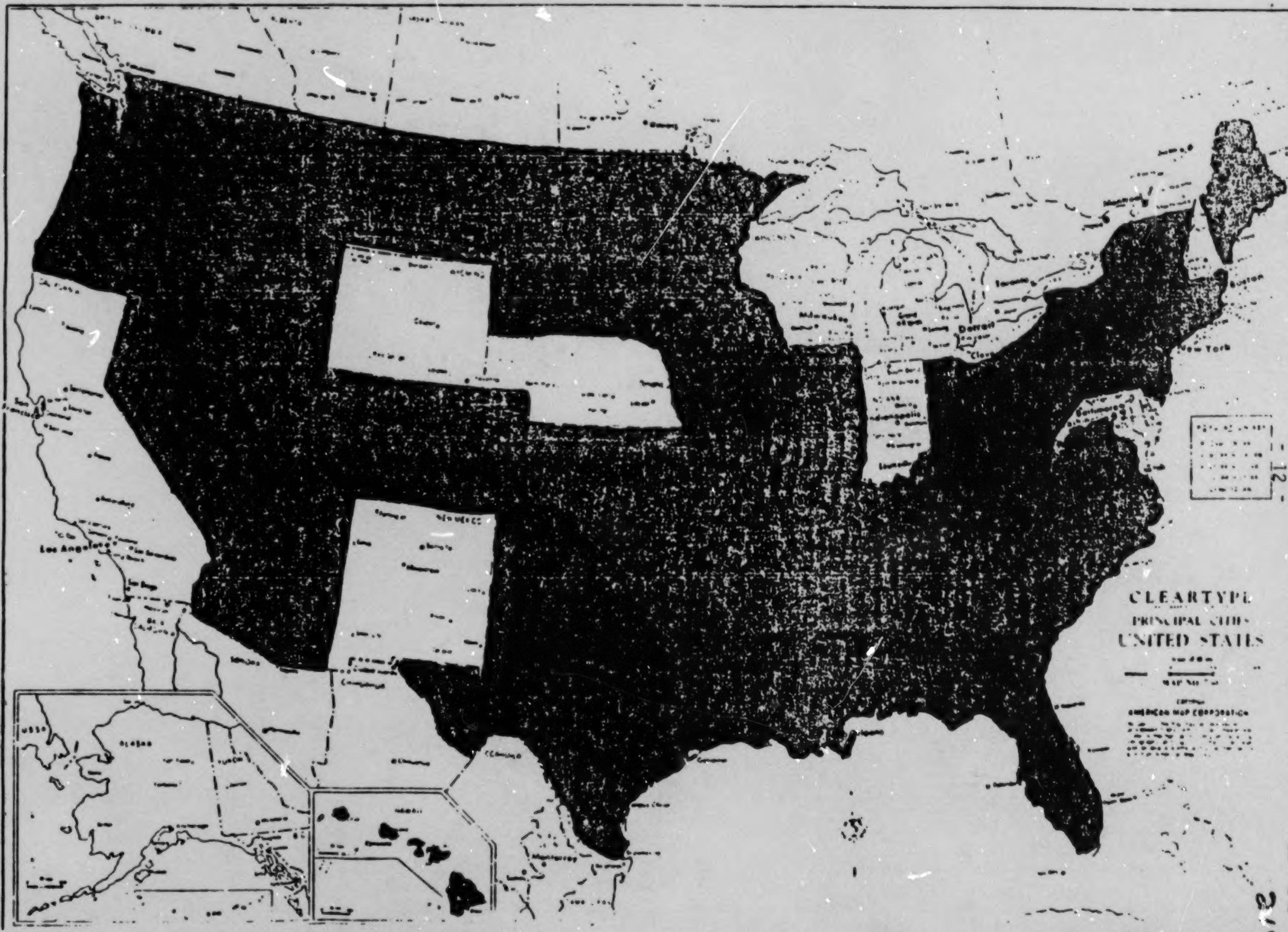
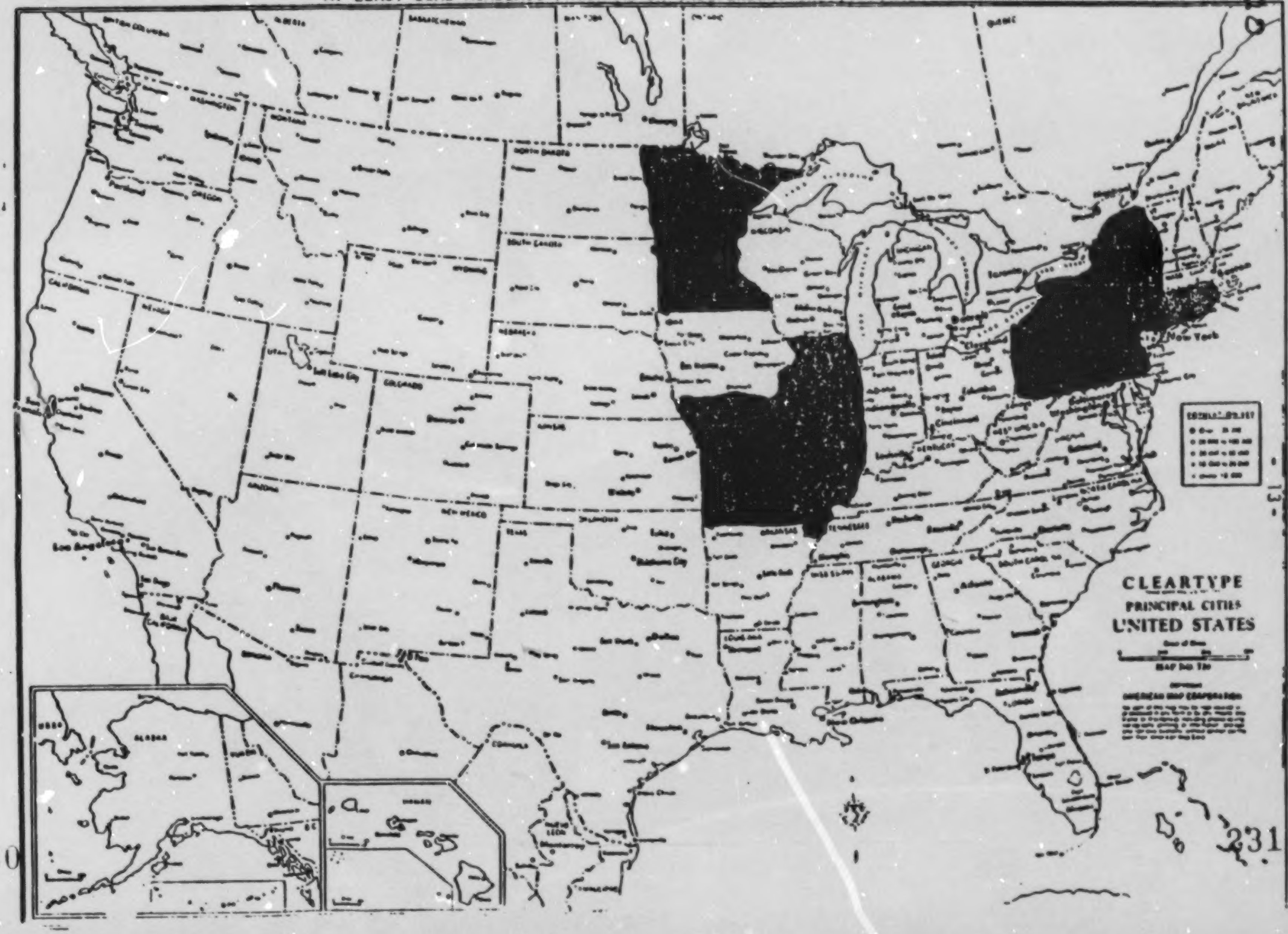


FIGURE 2

SHEEO STATES WHERE AGENC[illegible] AS AUTHORITY TO REVIEW AT LEAST SOME ACADEMIC PROGRAMS IN INDEPENDENT INSTITUTIONS



latter are indicative of exceptions provided for existing independent institutions at the time that the law is passed, excluding them from the need to seek approval. In other instances, the exceptions represent in-state institutions which are not typically included in regulations requiring licensing and approval of out-of-state institutions wishing to offer courses or programs within a state.

Table 2

SHEEO AGENCY PROGRAM APPROVAL (i.e., NEW PROGRAMS)
OF AT LEAST SOME ACADEMIC PROGRAMS
AS OF JULY 1, 1983

RECOMMEND ONLY					APPROVE				
PUBLIC			INDEPENDENT		PUBLIC			INDEPENDENT	
2 YR.	4 YR.	UNIV.	ALL	SOME	2 YR.	4 YR.	UNIV.	ALL	SOME
7	7	8	2	2	34	34	39	4	9

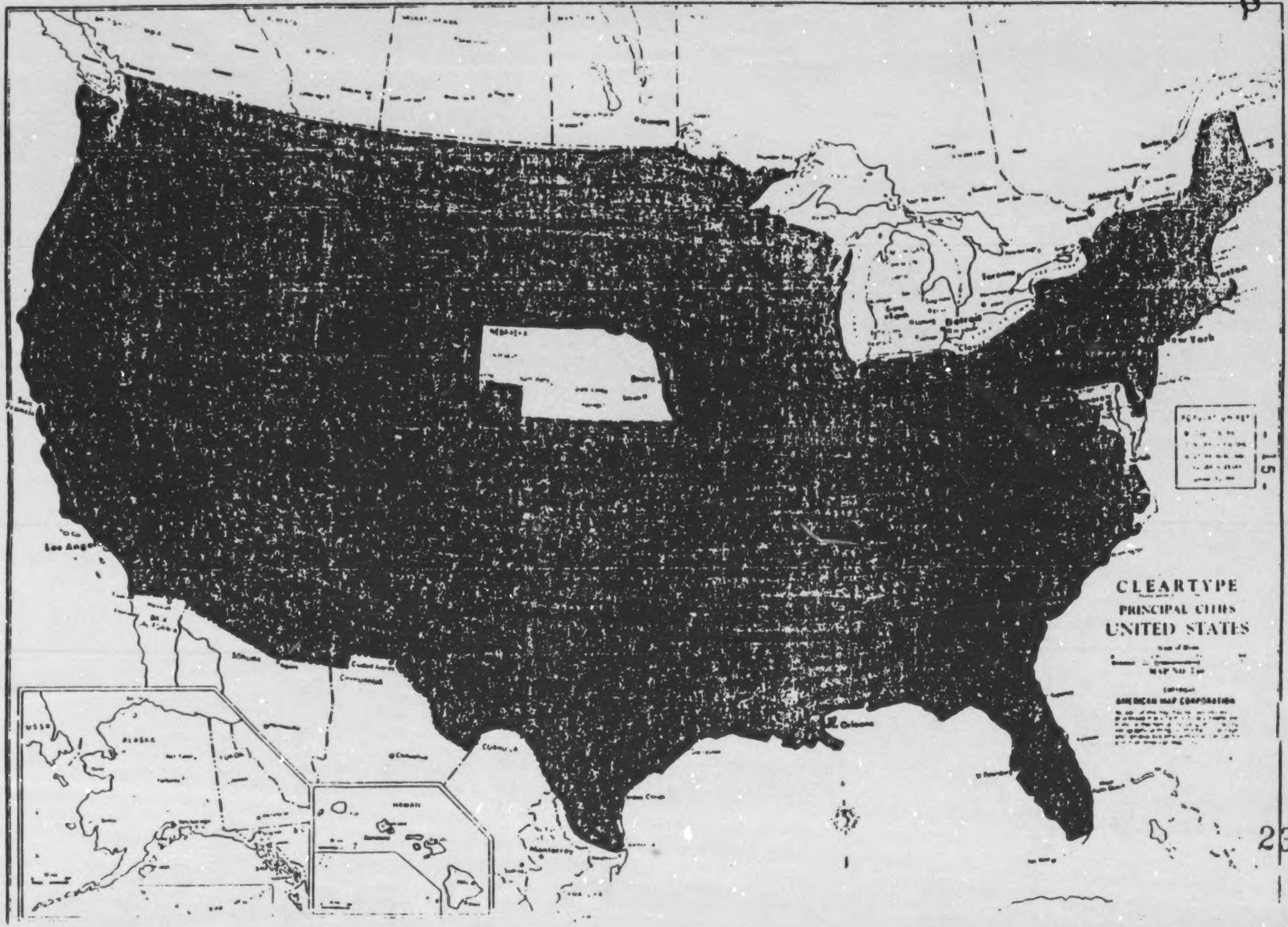
Figures 4 and 5 show a map of the states indicating the states with recommending and approval authority for new academic programs and states with authority over at least some independent institutions.

Purposes of Review and Approval

There are almost as many reasons and combinations of reasons for state board review and approval of academic programs as there are state boards. Typical reasons for review and approval include: maintenance of quality, resource allocation and re-allocation, demonstration of need, consumer protection and accountability. The purposes also vary somewhat by the type of board, with governing boards generally (but not exclusively) more concerned with quality and resource issues, and coordinating type boards more concerned with accountability, state-wide need and consumer protection.

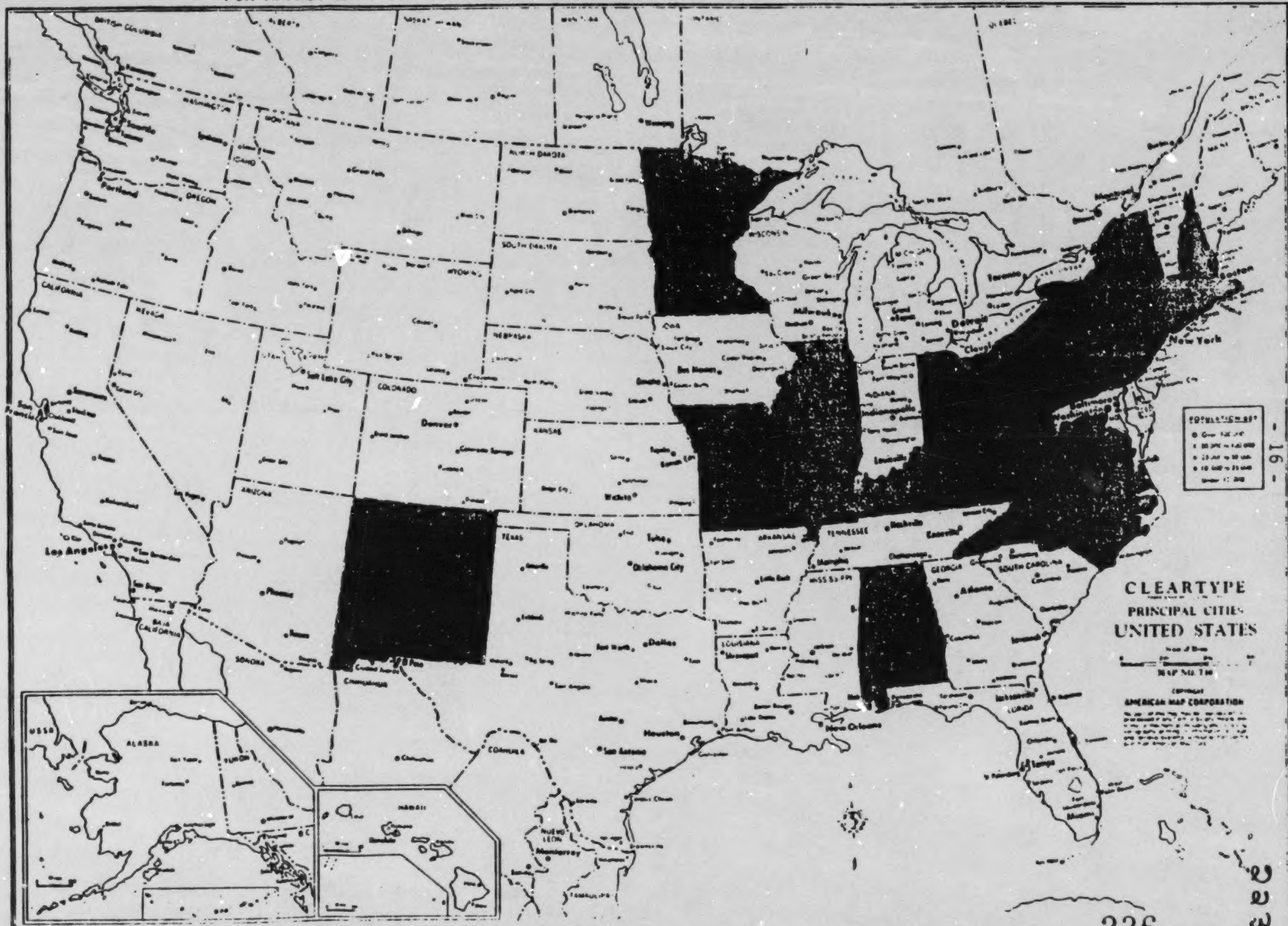
FIGURE 3

SHEEO STATES WHERE AGENCY HAS AUTHORITY TO APPROVE OR RECOMMEND FOR APPROVAL AT LEAST SOME ACADEMIC PROGRAMS



FIGURF

SHEEO STATES WHERE AGENCY HAS .HORITY TO APPROVE OR RECOMMEND FOR APPROVAL AT LEAST SOME NEW ACADEMIC PROGRAMS IN INDEPENDENT INSTITUTIONS



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224 Table 3 shows the review and approval authority by state.

Table 3

SHEEO AGENCY PROGRAM REVIEW/APPROVAL AUTHORITY FOR AT LEAST SOME ACADEMIC PROGRAMS as of July 30, 1983

	PROGRAM APPROVAL										PROGRAM REVIEW									
	RECOMMEND ONLY					APPROVE					RECOMMEND ONLY					DISCONTINUE				
	PUBLIC			IN-DEP.		PUBLIC			IN-DEP.		PUBLIC			IN-DEP.		PUBLIC			IN-DEP.	
STATE	2 YEAR	4 YEAR	UNIV.	ALL	SOME	2 YEAR	4 YEAR	UNIV.	ALL	SOME	2 YEAR	4 YEAR	UNIV.	ALL	SOME	2 YEAR	4 YEAR	UNIV.	ALL	SOME
1. Alabama						X	X	X		X	X	X	X							
2. Alaska	X	X	X																	
3. Arizona								X										X		
4. Arkansas	X	X	X								X	X	X							
5. California	X	X	X																	
6. Colorado						X		X			X	X	X							
7. Connecticut						X	X	X		X						X	X	X		X
8. Delaware	X	X	X																	
9. District of Columbia												X	X							
10. Florida						X		X								X		X		
11. Georgia						X	X	X								X	X	X		
12. Hawaii						X	X	X								X	X	X		
13. Idaho		X	X									X	X							
14. Illinois						X	X	X		X	X	X	X		X					X
15. Indiana						X	X	X			X	X	X							
16. Iowa							X	X									X	X		
17. Kansas							X	X									X	X		
18. Kentucky						X	X	X		X						X	X	X		
19. Louisiana						X	X	X								X	X	X		
20. Maine						X	X	X								X	X	X		
21. Maryland																				
22. Massachusetts						X	X	X		X						X	X	X		
23. Michigan																				
24. Minnesota	X	X	X	X							X	X	X	X						
25. Mississippi								X										X		
26. Missouri					X	X	X	X			X	X	X		X					
27. Montana						X	X	X			X	X	X							
28. Nebraska																				

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	PROGRAM APPROVAL										PROGRAM REVIEW									
	RECOMMEND ONLY					APPROVE					RECOMMEND ONLY					DISCONTINUE				
	PUBLIC			IN-DEP.		PUBLIC			IN-DEP.		PUBLIC			IN-DEP.		PUBLIC			IN-DEP.	
STATE	2 YEAR	4 YEAR	UNIV.	ALL	SOME	2 YEAR	4 YEAR	UNIV.	ALL	SOME	2 YEAR	4 YEAR	UNIV.	ALL	SOME	2 YEAR	4 YEAR	UNIV.	ALL	SOME
29. Nevada						X		X			X		X							
30. New Hampshire									X											
31. New Jersey						X	X	X			X	X	X							
32. New Mexico	X							X	X											
33. New York						X	X	X	X							X	X	X	X	
34. No. Carolina							X	X		X						X	X	X		
35. No. Dakota						X	X	X			X	X	X							
36. Ohio						X	X	X	X		X									
37. Oklahoma						X	X	X								X	X	X		
38. Oregon	X	X	X			X	X	X			X	X	X							
39. Pennsylvania			X		X	X	X			X			X			X	X			X
40. Puerto Rico						X	X	X								X	X	X		
41. Rhode Island						X	X	X								X	X	X		
42. So. Carolina						X	X	X			X	X	X							
43. So. Dakota						X	X	X								X	X	X		
44. Tennessee						X	X	X			X	X	X							
45. Texas						X	X	X								X	X	X		
46. Utah						X	X	X								X	X	X		
47. Vermont						X	X	X								X	X			
48. Virginia						X	X	X		X						X	X	X		
49. Washington						X	X	X			X	X	X							
50. West Virginia						X	X	X		X						X	X	X		
51. Wisconsin						X	X	X								X	X	X		
52. Wyoming																				
TOTALS	7	7	8	2	2	34	34	39	4	9	16	16	18	1	2	21	22	23	1	3

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Criteria for Review and Approval

The general criteria for review and approval of academic programs are very similar from state to state, but they differ with respect to the specific indicators of each criterion and the weight given to each criterion. In general, the criteria relate to the purposes of the review and the type of board. Typical general criteria include: quality, need/demand, relation to institutional mission (i.e., centrality), and cost for new programs; and quality, relation to mission (i.e., centrality), need, cost and productivity for existing programs. The existing and/or potential duplication of a program with other similar programs in the state is also frequently included in the criteria by which programs are judged. A trend of sorts that was identified in this study is the increasing use of simple outcomes measures (e.g., information on program graduates, success on required professional examinations, entrance to graduate schools, etc.) in the review of existing programs. About ten (10) states have indicated the use of such measures.

SH/3

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AN ANALYSIS OF THE DISTRIBUTION OF PROGRAMS AT MICHIGAN PUBLIC COLLEGES AND UNIVERSITIES

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STATE OF MICHIGAN

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AN ANALYSIS OF THE DISTRIBUTION OF PROGRAMS AT MICHIGAN PUBLIC COLLEGES AND UNIVERSITIES

Prepared For

THE GOVERNOR'S COMMISSION ON THE FUTURE OF HIGHER EDUCATION

May 1984

INTRODUCTION

This is an analysis of the distribution of baccalaureate, masters, and doctoral programs at Michigan's public colleges and universities, their size and how they have changed from 1979 to 1982.

The review is based on degree conferral data that has been aggregated into the 21 academic areas used by the Higher Education General Information Survey (HEGIS). It is important to note that these academic area categories combine numerous disciplines into single categories. For example, the HEGIS social science academic area includes such diverse disciplines as economics, history, and political science. Accordingly, an analysis at this relatively high level of detail can identify instances of academic area duplication, but cannot identify discipline level duplication.

ANALYSIS

Before the analysis is presented, two frequently used terms need to be defined.

* Academic area: 21 summary categories used by the Higher Education General Information Survey; for example, foreign languages, letters, psychology, social science, etc. (See Table 1 for a complete list.)

* Institutional program: A program operated by an institution in one of the 21 academic areas; for example, Michigan State University's foreign language program, Central Michigan University's foreign language program, etc.

The following matrix summarizes the number of academic areas and institutional programs by degree level.

	Academic Areas	Institutional Programs
Doctoral	21	55
Masters	21	142
Baccalaureate	21	264

It should also be noted that three degree production benchmarks are used to highlight the smaller institutional programs. They are used only for illustrative purposes and are not based on any objective standard. In this analysis, low volume institutional programs are defined as those that generated fewer than 10 doctoral degrees, 15 masters degrees and 20 baccalaureate degrees in 1982.

1. Doctoral Programs

Seven of Michigan's public universities grant doctorates. Of the 21 academic areas identified in this review, 15 (71 percent) are offered at more than one institution. Of the 55 institutional programs operated, 22 (40 percent) generated fewer than 10 degrees in 1982. From 1979 to 1982, the number of doctorates conferred in the system increased 129 degrees (10 percent) to 1,500 degrees. This increase is largely accounted for by changes in the education academic area: Wayne and Michigan State conferred 171 more education doctorates than they did in 1979 and the University of Michigan conferred 35 fewer.

Tables 1 and 1a display the distribution of institutional programs by ranking the most available programs, i.e., those offered by the most institutions, to the right of the table. As Table 1 shows, while up to 5 institutions offer doctorates in the same academic area, typically most academic areas are dominated by one or two universities. Indeed, Michigan State University and the University of Michigan conferred 75-100 percent of the degrees in all but four areas.

Table 1a gives an indication of the size of the programs by highlighting those schools that conferred fewer than 10 degrees in 1982. Not surprizingly, these low volume programs tend to fall in academic areas where there are few degrees conferred statewide. There are, however, seven small institutional programs, those clustered to the lower right of the table, that generated fewer than 10 degrees in academic areas where a number of other institutions offer programs and where a relatively large number of degrees were conferred statewide in 1982.

The final factor to be analyzed here is the doctoral level academic area and institutional program changes from 1979 to 1982. Chart 1 displays systemwide academic area changes over this period. A number of changes in low and moderate volume academic areas have occurred, but these involve few degrees. For example, the 26 percent increase in the engineering academic area was produced by an increase of only 21 degrees. The largest numerical change was in the education academic area where 132 more degrees were conferred. As was noted earlier, the University of Michigan conferred fewer awards and Wayne State University and Michigan State University conferred more degrees in this academic area.

TABLE 1
1982 DOCTORAL LEVEL PROGRAM DISTRIBUTION
DISPLAYED AS PERCENT OF TOTAL DEGREES CONFERRED

ACADEMIC AREAS

← FEWER INSTITUTIONAL PROGRAMS MORE INSTITUTIONAL PROGRAMS →

INSTITUTIONS OFFERING ← FEWER PROGRAMS MORE PROGRAMS →

	ARCH.	AREA ST.	COMMUN.	HOME EC.	LIB. SCI.	PUB. AFF.	AGRI.	ARTS	HEALTH	FOR. LANG	BUSINESS	INTER-DISC.	COMPUTER	MATH	LETTERS	BIOLOGY	SOC. SCI.	EDUCATION	PSYCH.	ENGR.	PHY. SCI.
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
UM-AA	100	100	100		100	100	12	77	66	65	38	91	71	37	33	42	50	23	42	62	32
MSU				100			89	23		35	62	6	14	47	31	36	33	39	25	16	45
WSU									34			3	14	16	36	21	14	33	24	14	18
WMU																	3	6	5		1
MTU																				1	4
OU																				7	
CMU																			4		
EMU																					
FSC																					
GVSC																					
NMU																					
LSSC																					
SVSC																					
UM-D																					
UM-F																					
TOTAL PERCENT	100	100	100	100	100	100	101	100	100	100	100	100	99	100	100	99	100	101	100	100	100
TOTAL DEGREES	13	1	7	12	6	2	79	39	32	20	26	33	7	19	42	158	144	523	127	101	100

TABLE 1a
1982 DOCTORAL LEVEL PROGRAM SIZE
DISPLAYED AS PERCENT OF TOTAL DEGREES CONFERRED
"[]" INDICATES LESS THAN 10 DEGREES

ACADEMIC AREAS

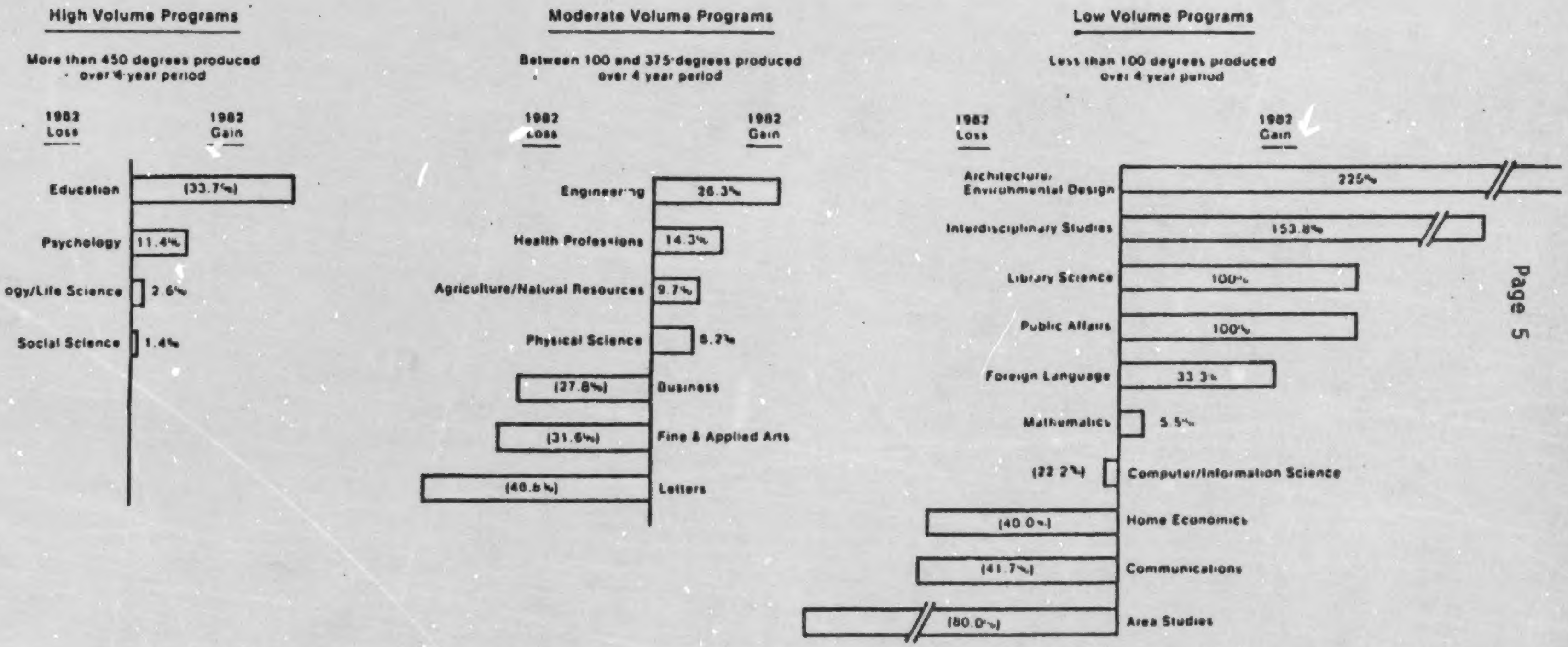
←—— FEWER INSTITUTIONAL PROGRAMS   MORE INSTITUTIONAL PROGRAMS ——→

INSTITUTIONS OFFERING ↑ MORE PROGRAMS — FEWER PROGRAMS ↓

	ARCH.	AREA ST.	COMMUN.	HOME EC.	LIB. SCI.	PUB. AFF.	AGRI.	ARTS	HEALTH	FOR. LANG	BUSINESS	INTER-DISC.	COMPUTER	MATH	LETTERS	BIOLOGY	SOC. SCI.	EDUCATION	PSYCH.	ENGR.	PHY. SCI.
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
UM-AA	100	[100]	[100]		[100]	[100]	[12]	77	66	65	38	91	[71]	[37]	33	42	50	23	42	62	32
MSU				100			89	[23]		[35]	62	[6]	[14]	[47]	31	36	33	39	25	16	45
WSU									34			[3]	[14]	[16]	36	21	14	33	24	14	18
WMU																	[3]	6	[5]		[1]
MTU																				[1]	[4]
OU																				[7]	
CMU																			[4]		
EMU																					
FSC																					
GVSC																					
NMU																					
LSSC																					
SVSC																					
UM-D																					
UM-F																					
TOTAL PERCENT	100	100	100	100	100	100	101	100	100	100	100	100	99	100	100	99	100	101	100	100	100
TOTAL DEGREES	13	1	7	12	6	2	79	39	32	20	26	33	7	19	42	158	144	523	127	101	100

CHART 1

State Colleges and Universities
Doctorate Degree Conferrals
1982 Change from 1979



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Higher Ed. Data File
1983

2. Masters Programs

Twelve of Michigan's 15 public colleges and universities grant masters degrees. Degree programs in all of the 21 HEGIS academic areas are offered by more than one institution. Of the 142 masters level institutional programs, 49, about one-third, awarded fewer than 15 degrees. A total of 557 fewer master degrees, a 4 percent decline, were conferred in 1982 than in 1979. This decline is largely attributable to a reduction in the education academic area.

A larger number of institutions offer masters degrees than offer doctorates, but, as was the case with doctorates, most academic areas are dominated by a few institutions. As Table 2 shows, institutional programs in all academic areas are available at more than one institution. In all but 8 of the academic areas, however, 75 to 100 percent of the degrees conferred systemwide in 1982 were awarded by three or fewer schools.

Table 2a highlights the institutional programs that generated fewer than 15 degrees in 1982. While these low volume institutional programs tend to be found in the state's smaller colleges, it is relevent to note that large universities also offer a number of programs that fall below this benchmark. Similarly, as would be expected, many of the small institutional programs are in academic areas that generate few degrees systemwide, but some small institutional programs can be found in academic areas where other institutions confer a very large number of degrees. For example, in the education academic area, the highest volume masters level academic area which generated 4,400 degrees in 1982, one institution conferred fewer than 15 degrees.

As was noted earlier, fewer masters degrees were conferred in 1982 than in 1979. As Chart 2 shows, reductions occured in one half of the academic areas. There were only two shifts involving a large number of degrees: education declined 17 percent or 923 degrees, and business increased 12 percent or 319 degrees. Similar academic area shifts also occured at each institution offering the degrees.

TABLE 2
1982 MASTERS LEVEL PROGRAM DISTRIBUTION
DISPLAYED AS PERCENT OF TOTAL DEGREES CONFERRED

ACADEMIC AREAS

← FEWER INSTITUTIONAL PROGRAMS   MORE INSTITUTIONAL PROGRAMS →

INSTITUTIONS OFFERING ← FEWER PROGRAMS   MORE PROGRAMS →

	AREA ST.	ARCH.	AGRI.	LIB. SCI.	FOR. LANG.	INTER-DISC.	COMMUN.	HOME EC.	ARTS	HEALTH	COMPUTER	PHY. SCI.	SOC. SCI.	LETTERS	MATH	PSYCH.	BIOLOGY	ENGR.	PUB. AFF.	EDUCATION	BUSINESS
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
UM-AA	97	95	24	51	45	12	24	10	49	42	27	52	34	31	41	20	34	58	34	9	15
MSU		5	71		11	4	56	38	16	5	16	20	19	14	32	12	28	10	13	19	12
WMU				27	7	8	16	8	7	7	8	9	14	3	4	21	5	2	13	12	4
CMU				2			3	6	3	35	6	2	6	18	5	10	4	1	16	10	52
EMU	3				37	72	2	23	11		14	2	18	9	6	12	8	5		17	4
WSU				20				15	10	10	20	8	6	17	7	15	10	14	20	16	7
OU									4		10			5	4	7	1	2	1	10	2
NMU										1		1	2	4			4		2	3	<1
MTU			5									7			2		6	4			1
GVSC										<1						3			2	1	2
UM-D						4												4	<1	<1	<1
SVSC													<1							2	1
FSC																					
LSSC																					
UM-F																					
TOTAL PERCENT	100	100	100	100	100	100	101	100	100	100	101	101	99	101	101	100	100	100	101	99	100
TOTAL DEGREES	32	153	199	290	86	25	153	144	307	918	113	158	360	337	104	216	256	900	996	4400	3042

TABLE 2a
1982 MASTERS LEVEL PROGRAM SIZE
DISPLAYED AS PERCENT OF TOTAL DEGREES CONFERRED

"[]" INDICATES LESS THAN 15 DEGREES

ACADEMIC AREAS

← FEWER INSTITUTIONAL PROGRAMS   MORE INSTITUTIONAL PROGRAMS →

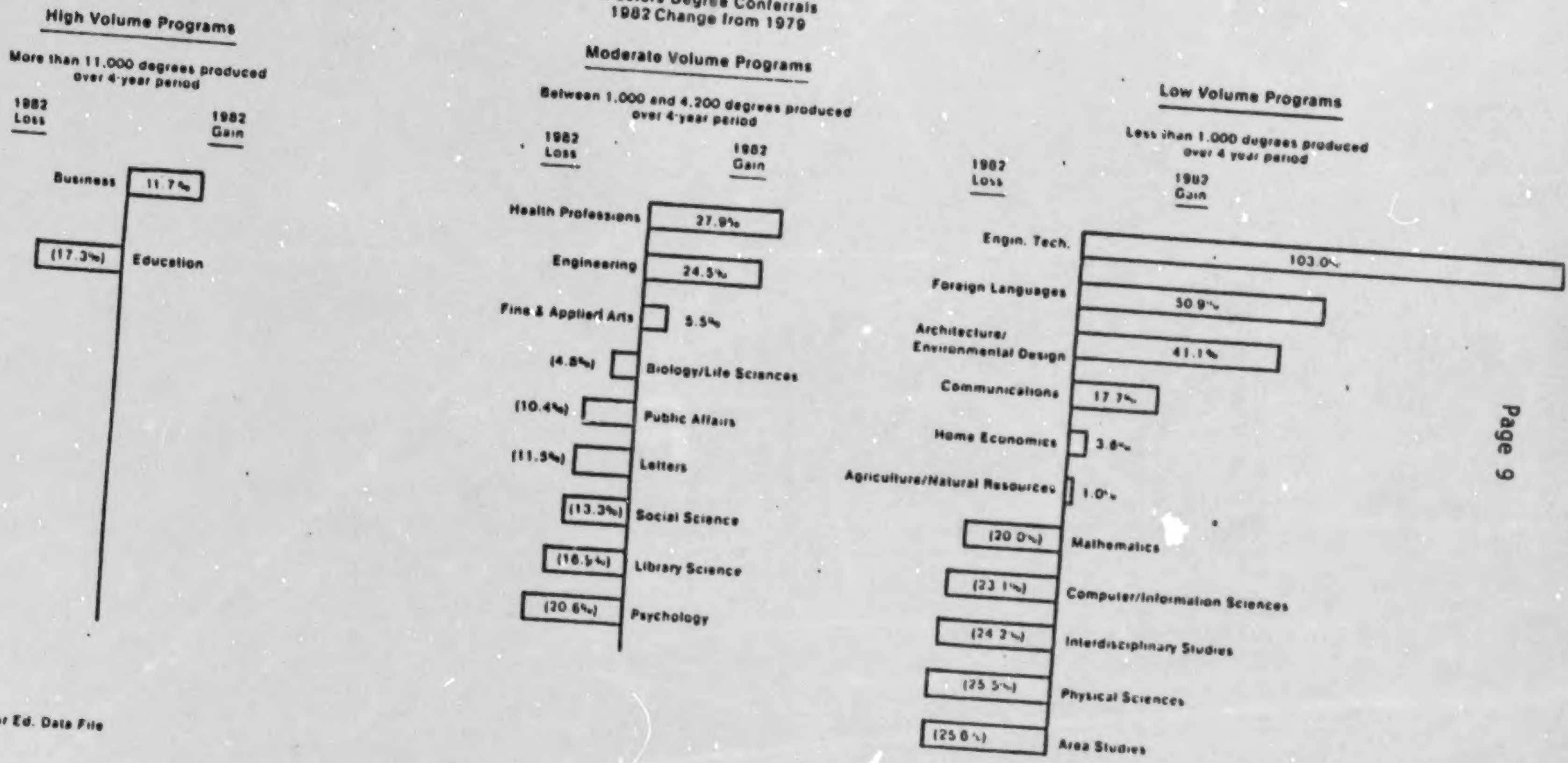
INSTITUTIONS OFFERING

← FEWER PROGRAMS   MORE PROGRAMS →

	AREA ST.	ARCH.	AGRI.	LIB. SCI.	FOR. LANG.	INTER-DISC.	COMMUN.	HOME EC.	ARTS	HEALTH	COMPUTER	PHY. SCI.	SOC. SCI.	LETTERS	MATH	PSYCH.	BIOLOGY	ENGR.	PUB. AFF.	EDUCATION	BUSINESS
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
UM-AA	97	95	24	51	45	[12]	24	[10]	49	42	27	52	34	31	41	20	34	58	34	9	15
MSU		[5]	71		[11]	[4]	56	38	16	5	16	20	19	14	32	12	28	10	13	19	12
WMU				27	[7]	[8]	16	[8]	7	7	[8]	[9]	14	[3]	[4]	21	[5]	[2]	13	12	4
CMU				[2]			[3]	[6]	[3]	35	[6]	[2]	6	18	[5]	10	[4]	1	16	10	52
EMU	[3]				37	72	[2]	23	11		14	[2]	18	9	[6]	12	8	5		17	4
WSU				20				15	10	10	20	[8]	6	17	[7]	15	10	14	20	16	7
OU									[4]		[10]			5	[4]	7	[1]	2	[1]	10	2
NMU										[1]		[1]	[2]	[4]			[4]		2	3	[<1]
MTU			[5]									[7]			[2]		6	4			1
GVSC										[<1]						[3]			2	1	2
UM-D						[4]												4	[<1]	[<1]	[<1]
SVSC													[<1]							2	1
FSC																					
LSSC																					
UM-F																					
TOTAL PERCENT	100	100	100	100	100	100	101	100	100	100	101	101	99	101	101	100	100	100	101	99	100
TOTAL DEGREES	32	153	199	290	86	25	153	144	307	918	113	158	360	337	104	216	256	900	996	4400	3042

CHART 2

State Colleges and Universities
Masters Degree Conferrals
1982 Change from 1979



SFA
Higher Ed. Data File
1983

3. Baccalaureate Programs

Baccalaureate degree programs in all of the 21 HEGIS academic areas are available at more than one institution, but only three academic areas--engineering and engineering technology, biology, and business--are offered by all institutions. A total of 264 institutional programs produced degrees in 1982; 65 (25 percent) of them generated fewer than 20 degrees. The number of degrees conferred increased 6 percent, or 1,888 degrees to 31,210 degrees, from 1979 to 1982. The business and engineering academic areas had the largest increases, 1,623 and 956 degrees respectively, and education's 1,085 degree decline experienced the largest reduction.

Table 3 shows that most institutions offer degrees in most academic areas. The following comparison illustrates the pervasive availability of programs throughout the system. If each institution operated a degree program in all academic areas, a total of 315 institutional programs (15 institutions times 21 program areas) would be required. In 1982, degrees were conferred in 264 institutional programs throughout the system, or 84 percent of the 315 institutional program maximum.

A relatively lower percentage of baccalaureate programs fall below the baccalaureate 20 degree volume benchmark used in this analysis than fell below the masters or doctoral benchmarks. Still, as Table 3a shows, 25 percent of the 264 institutional programs operated by the system conferred fewer than 20 degrees. While most of the small institutional programs are found at the smaller state colleges, about one-third of the low volume institutional programs are found in high total enrollment state universities.

TABLE 3
1982 BACCALAUREATE LEVEL PROGRAM DISTRIBUTION
DISPLAYED AS PERCENT OF TOTAL DEGREES CONFERRED

ACADEMIC AREAS

←——FEWER INSTITUTIONAL PROGRAMS MORE INSTITUTIONAL PROGRAMS——→

INSTITUTIONS OFFERING ←— FEWER PROGRAMS MORE PROGRAMS —→

	LIB. SCI.	ARCH.	HOME EC.	AGRI.	AREA ST.	COMMUN.	FOR. LANG.	ARTS	LETTERS	PUB. AFF.	PSYCH.	INTER-DISC.	SOC. SCI.	MATH	PHY. SCI.	HEALTH	COMPUTER	EDUCATION	ENGR.	BIOLOGY	BUSINESS
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
MSU		42	50	77	5	47	24	16	20	27	21	12	23	23	17	18	14	20	18	24	22
WMU		<1	7	3	4	14	12	13	10	9	7	3	9	15	14	10	5	13	10	7	16
UM-AA		48	1	9	64	10	37	27	28		23	39	29	15	18	17	12	8	27	26	5
WSU	33		10		12	6	7	14	10	11	13	19	6	5	10	16	12	8	7	8	7
CMU	67		16		2	9	5	6	8	10	10	4	6	10	8	1	10	16	1	8	12
NMU		6	3	4		1	1	3	4	9	2	<1	2	2	2	6	3	7	1	3	3
EMU			13		2	2	6	10	9	7	4	2	7	2	9	7	3	15	1	7	9
GVSC		4			5	1	3	7	2	4	3	<1	4	1	6	4	4	1	<1	2	2
OU					4	5	5	3	4	7	9	10	4	4	4	7	7	3	3	3	4
UM-F				<1			1	<1	2	<1	2	3	3	3	3	3	3	2	<1	2	2
UM-D				<1	4			1	2	<1	5	6	4	5	3		6	2	5	3	3
SVSC								1	1	3	1	<1	2		1	1	3	2	1	1	1
MTU				7								2	<1	7	5	1	5		22	4	2
LSSC				<1					1	4	1	2	1	2	1	1		<1	2	<1	1
FSC						5				9				5		8	15	3	3	2	11
TOTAL PERCENT	100	100	100	100	102	100	101	101	101	100	101	102	100	99	101	100	102	100	101	100	100
TOTAL DEGREES	15	227	704	1132	58	1498	215	985	978	1720	1382	1149	2637	222	602	2489	704	2903	3626	1245	6719

TABLE 3a
1982 BACCALAUREATE LEVEL PROGRAM SIZE
DISPLAYED AS PERCENT OF TOTAL DEGREES CONFERRED
"[]" INDICATES LESS THAN 20 DEGREES

ACADEMIC AREAS

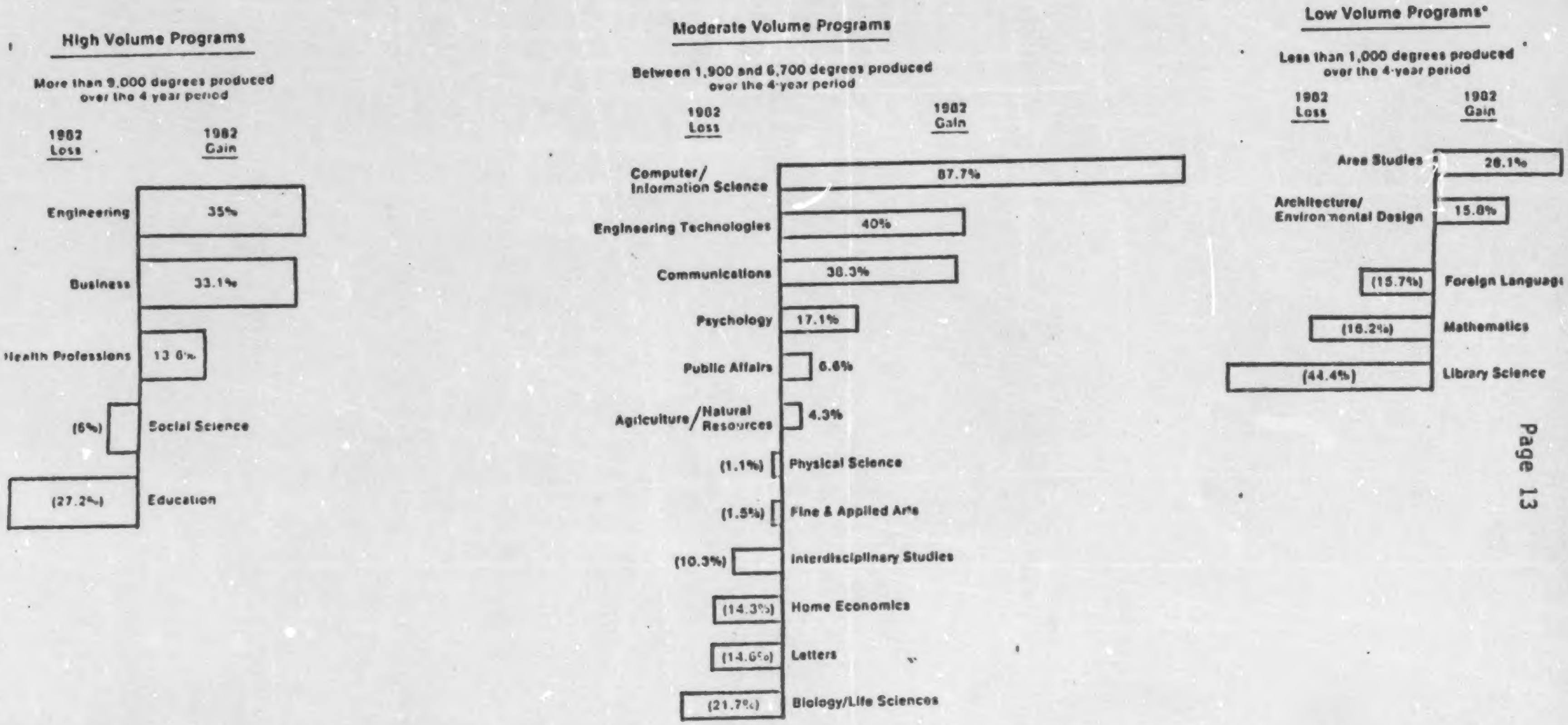
← FEWER INSTITUTIONAL PROGRAMS   MORE INSTITUTIONAL PROGRAMS →

INSTITUTIONS OFFERING
← FEWER PROGRAMS   MORE PROGRAMS →

	LIB. SCI.	ARCH.	HOME EC.	AGRI.	AREA ST.	COMMUN.	FOR. LANG.	ARTS	LETTERS	PUB. AFF.	PSYCH.	INTER-DISC.	SOC. SCI.	MATH	PHY. SCI.	HEALTH	COMPUTER	EDUCATION	ENGR.	BIOLOGY	BUSINESS
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
MSU		42	50	77	[5]	47	24	16	20	27	21	12	23	23	17	18	14	20	18	24	22
WMU		[<1]	7	3	[4]	14	12	13	10	9	7	3	9	15	14	10	5	13	10	7	16
UM-AA		48	[1]	9	64	10	37	27	28		23	39	29	15	18	17	12	8	27	26	5
WSU	[33]		10		[12]	6	7	14	10	11	13	19	6	[5]	10	16	12	8	7	8	7
CMU	[67]		16		[2]	9	[5]	6	8	10	10	4	6	10	8	1	10	16	1	8	12
NMU		[6]	[3]	4		[1]	[1]	3	4	9	2	[<1]	2	[2]	[2]	6	3	7	1	3	3
EMU			13		[2]	2	[6]	10	9	7	4	[2]	7	[2]	9	7	[3]	15	1	7	9
GVSC		[4]			[5]	[1]	[3]	7	2	4	3	[<1]	4	[1]	6	4	4	1	[<1]	2	2
OU					[4]	5	[5]	3	4	7	9	10	4	[4]	4	7	7	3	3	3	4
UM-F				[<1]			[1]	[<1]	[2]	[<1]	2	3	3	[3]	[3]	3	3	2	[<1]	[2]	[illegible]
UM-D				[<1]	[4]			[1]	[2]	[<1]	5	6	4	[5]	[3]		6	2	5	3	[illegible]
SVSC								[1]	[1]	3	[1]	[<1]	2		[1]	1	[3]	2	1	[1]	[illegible]
MTU				7								2	[<1]	[7]	5	1	5		22	4	
LSSC				[<1]					[1]	4	[1]	[2]	1	[2]	[1]	1		[<1]	2	[<1]	1
FSC						5				9				[5]		8	15	3	3	2	11
TOTAL PERCENT	100	100	100	100	102	100	101	101	101	100	101	102	100	99	101	100	102	100	101	100	100
TOTAL DEGREES	15	227	704	1132	58	1498	215	985	978	1720	1382	1149	2637	222	602	2489	704	2903	3626	1245	6719

CHART 3

State Colleges and Universities
Baccalaureate Degree Conferrals
1982 Change from 1979



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Higher Ed. Data File
1983

SUMMARY

1. Program distribution

- At the doctoral level, more than one institution confers degrees in 15 of the 21 HEGIS academic areas. While seven institutions grant doctorates, in all but 4 academic areas, Michigan State University and the University of Michigan awarded 75 to 100 percent of all degrees in 1982.

- Degrees in all 21 academic areas are conferred by more than one institution at the masters level. In all but 8 academic areas, 75 to 100 percent of the degrees were conferred by three institutions.

- All academic areas are also offered by more than one institution at the baccalaureate level, but only 3 academic areas are offered by all institutions. The system is not as dominated by a few institutions at this level as it is at the doctoral and masters levels.

2. Program size

- A significant number of small institutional programs exist at each degree level. This analysis identifies 40 percent of the doctoral, 35 percent of the masters, and 25 percent of the baccalaureate programs as low volume degree producers.

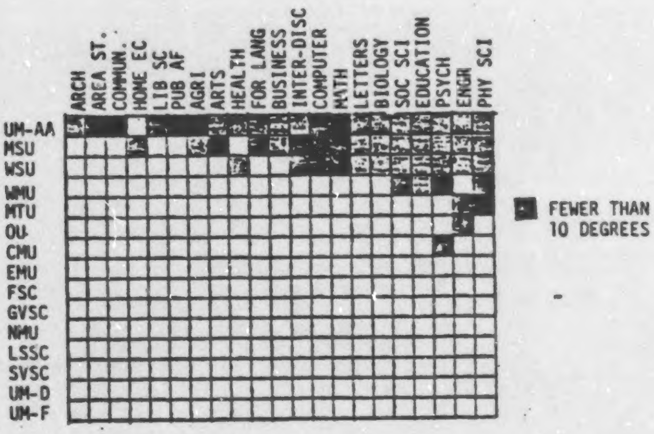
3. Program change

- The total number of degrees generated at each degree level has remained fairly stable over the 1979 - 1982 period.

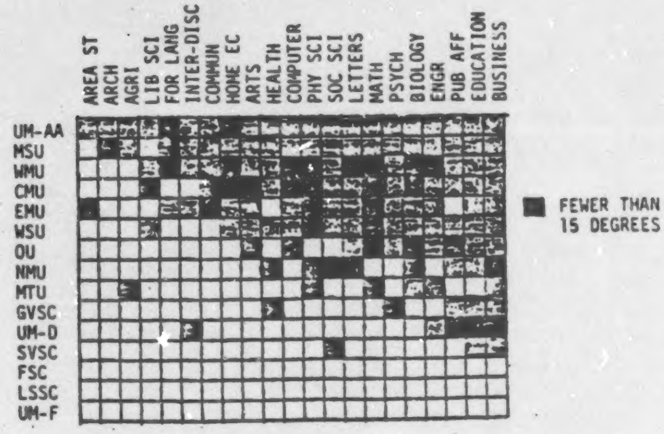
- There has been a general shift away from education academic area degrees by virtually all institutions at the baccalaureate and masters level. At the doctoral level, the number of degrees declined at the University of Michigan, but significantly increased at Wayne State University and Michigan State University.

1982 DEGREE CONFERRALS
MICHIGAN PUBLIC COLLEGES AND UNIVERSITIES
(White Cell Indicates No Degrees)

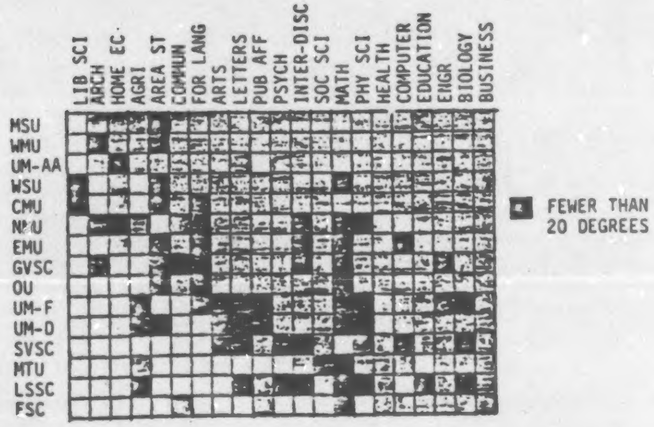
DOCTORAL PROGRAMS



MASTERS PROGRAMS



BACCALAUREATE PROGRAMS



OVERVIEW OF EDUCATIONAL TELEVISION IN MICHIGAN

OVERVIEW OF
EDUCATIONAL TELEVISION
IN MICHIGAN

SUBMITTED TO GOVERNOR'S COMMISSION
ON THE FUTURE OF HIGHER EDUCATION

MAY, 1984

Purpose

Educators, administrators, media mavens and the observers of higher education believe that before the end of the century television, with its complementing technologies, will have an unparalleled impact on all aspects of education, including quality, access and affordability.

Many of those observers believe that television will have an impact similar to the introduction of the printed word in the classroom. They believe television will have the same impact that movable type made in the 15th century.

However, there is an equal body of detractors who believe that the attributed cost efficiencies and unique learning potential of TV are overrated, and in fact, the traditional, teacher-student relationship will continue to be the predominate mode of instruction.

This paper briefly outlines some of the history of television, both commercially and in the classroom, and examines some of the current applications and the philosophies surrounding its use.

In addition, there are some suggestions regarding action that can be taken by the Commission to examine this topic in more detail.

History of Television

The technology of television nearly preceded the concept of motion picture photography when, in 1884, a German scientist developed what was called a scanner disk, which breaks an image into thousands of tiny dots.

It wasn't until 1889 that Thomas Alva Edison invented the Kinetoscope, the first practical moving picture machine and the forerunner of the modern motion picture projector.

But it was a half a century before an American perfected the cathode ray tube enabling him to make the first television set for the public.

Television differs from other telecommunication devices in that it was the only device to be developed for purely entertainment and then to be adapted to such chores as surveillance.

Commercial television has been around since the first official network show was broadcast from Detroit, Michigan, in February, 1940. Today, TV has come a long way from limited programming on a tiny screen until now Americans spend almost as much time watching TV as they do working or sleeping.

In the 1940's only a few thousand U.S. homes had TV, today, virtually every home in the U.S. has a TV. Most homes have a color TV with several other black-and-white TVs usually in residence.

Add to that these statistics: 40 percent of the homes in this country pay for cable TV with access up to 80 channels. Some 25 percent of the homes with cable also pay for an additional service like the Home Box Office movie channel. If you would have told a homeowner 20 years ago that they would pay $20 a month to watch TV they would have thought you'd watched too much of Soupy Sales.

Now, tack on the nearly 10 million homes nationwide that own a home video recorder. In the vernacular of a college sophomore: "We are wired."

Impact of Television

Television is irrevocably a part of American culture and its influence is so deeply felt that we often overlook its impact on our day-to-day existence.

Television affects all aspects of our life: our language, our dress, our schedules, even our toothpaste. It can create an overnight hero or heroine and videogenics can mean the end or the beginning of a politician. In recent years cities like Buffalo, N.Y. have fretted about what would happen to their sewage disposal system if the TV viewers watching the MASH finale all went to the bathroom during a commercial break.

Television's impact on mass merchandising is almost without limits. Literally overnight a slogan like "Where's the beef?" permeates our day-to-day conversations. Today some 40 states allow television coverage of court proceedings, an area once sacrosanct from coverage by photographers and broadcasters.

McDonalds, Burger King and Wendy's spend about $381 million each year on television spots to saturate the airwaves. Large metro daily newspapers commit page after page of copy to television coverage and critique. Television's influence is profound. A national museum of TV broadcasting has collected more then 20,000 title subjects commemorating the medium. This generation of youth has been tagged with the moniker -- video-generation. Without a doubt, television has taken its spot in history and is both a national treasure and a national embarrassment.

Television for Education

If we let it, television can have a profound impact on the way we learn. Even on a bad Nielsen night, more persons will watch a Shakespearean play on TV than have seen it on stage since it was penned by the Bard.

Television as a medium for learning is almost infinitely adaptable, with the ability to teach soldering to a vocational class, French to 11th graders and arthroscopic surgery to doctors.

Today, almost anything you can imagine can be done with TV. Its accompanying marriages to other technologies such as computers, telephones, satellites and the ubiquitous video game allow the user to interact with scholars and experts on other continents or even in some instances at the edge of a solar system.

But, like most technology-based systems, the patented technology available for use in television mostly exceeds any practical application of it.

As an example, the video disc, which has been heralded just in the last several years as a potential communications breakthrough, has in reality, been around since 1927. Or take the holographic movie camera invented by an Ann Arbor company just last year for which they claim there is no commercial application.

However, the inability to make those technological applications is changing fast in the educational arena. This acceleration of change is due to many factors, but not to be discounted is the relatively lower cost of technology. (A video recorder costing $1,000 several years ago, can now be had for $400.) It simply is getting cheaper to have better levels of technology.

Probably representative of that phenomena are the white satellite dishes that can be seen on roofs and in back yards as you drive across any city. Those satellite receiving stations represent just the edge of what's going on in our businesses, hospitals, high schools, colleges and homes.

Those dishes also represent what, after 60 years of

TV technology, is a frontier for education television. For example, five of our community colleges now have their own sophisticated satellite dishes with more adding them each year.

Educational Television Explained

Exactly what is educational television?

First, it's probably easier to say what it isn't. It is not a correspondence course with pictures, nor is it a televised lecture with readings, although this is what is typically thought of when one says educational television.

Practitioners like to define telecourse and tele-education systems as an examination and presentation of a body of knowledge and information through the use of sight and sound, color, movement and print.

More simply, it is a television-based learning process delivered through a variety of distribution channels, including cable TV, micro-wave, land-based systems, closed circuit television, public and commercial broadcast outlets, ITFS (Instructional Television Fixed System), satellite teleconferences or something as simple as a video-tape library where students can check out pre-recorded lectures.

More and more television's capabilities are being recognized by educators and trainers. So don't be surprised someday if a job applicant lists in his credentials that he is a graduate of TTU -- Ted Turner University.

And don't be surprised if fifth graders come home from school saying they had some guest teachers: Mr. Wizard, Miss Marple and Mr. T. But, also don't be surprised if the substantive application of TV in the college classroom still takes until the end of the century.

Because if history serves us well, there will continue to be false starts, technology overkill, and a continuation of bizarre, Rube Goldberg-like experiments in using television in the classroom.

With varying degrees of use and expertise, television in the K-12 system and college and university classrooms has been used in Michigan for nearly four decades. Television's use in Michigan's classrooms followed closely on the heels of the first educational television program broadcast in 1950 from Cleveland, Ohio.

Some of us remember the early experiments with educational television -- Sunrise Semester. Some will remember reading about DC-3's flying around the Midwest broadcasting educational TV to grade school children.

And, most anyone who has attended public college in Michigan during the last two decades, has probably watched, at a minimum, a talking head production. A talking head production is characterized as a single person talking to a single camera without the use of any editing, special effects or graphics. What you get is what you see. For example, if the person drops a book, that's what you see.

Also, most Michigan residents have probably viewed a Public Broadcast Service (PBS) Adult Educational series such as "Nova" or the recent "Vietnam" series. Nationally an approximate

254

100,000 students enroll in PBS courses each year. PBS officials list Michigan as the number one user of telecourses.

And, even though many thousands of college students are now enrolled in telecourses, watch closed circuit instructional TV, or use video lessons at Michigan colleges, Michigan's experience with educational television can be only described as sporadic. The range of expertise with which television is used as a teaching tool in our colleges and universities is represented by a continuum between one and 100.

There are several reasons for this wide range of quality and not to be discounted is the cost of television. Because, even though the cost of specific equipment may be dropping, the overall cost for equipment can be excessive. Experts call television a 10 letter word with dollar signs at each end, and a properly equipped television studio can easily eat up a million dollars.

Educational television, because it can be virtually anywhere at anytime, is in desperate need of coordination. A telecourse offered in Lansing can be shown simultaneously in a shopping mall in Traverse City or a hospital in Benton Harbor. While this is good, it also can be bad, as some colleges and universities use television to encroach on other institution's natural service areas.

In addition to the high cost of hardware, the cost of software (video tape, texts, manuals) for a single, 26-part, high quality PBS-type telecourse can exceed one million dollars to develop and execute.

Telecourses

Since a very limited number of telecourse productions are done on speculation, there is a limited quantity of top-notch productions. (Estimates range from 300-500.) What is available is usually gobbled up by the PBS Adult Learning Program or major state consortiums with exclusivity clauses giving PBS stations or the state groups the right to control distribution at a local level. PBS for the summer and fall schedules of 1984 has 23 telecourses available in its Adult Learning Service portfolio with courses ranging from Business of Management to Oceanus. Local Public Broadcast Stations pay a licensing fee to air these programs for a limited number of times in some instances. In addition, licensing agreements assess a per head enrollment fee and it is typical that local PBS affiliates will add broadcast and labor costs.

In Michigan, there are seven PBS stations; consequently, there are seven differing philosophies of applying the exclusivity clauses. There are also seven levels of commitment to using public broadcast for educational purposes. On the positive side, the PBS contracts with major producers have kept the telecourse costs down for Michigan's higher education institutions by use of the group buying discount.

Some PBS affiliates are cooperative in sharing telecourses, others are not. But the fact remains, PBS is only a part of the educational television system, and not the total answer since it is likely PBS will need to continue to support itself through public fund-raising efforts. Educational television does little to enhance the fund-raising effort. As a result, telecourses are typically shown at fringe times -- lunch, dinner, early morning or late evening. Limited broadcast time is a very practical limitation of using educational TV on PBS stations. For example, say a community college wanted to offer the entire range of PBS offerings, although that unlikely programming would gobble up a whopping 23 one-half hour segments each week. This is another reason most colleges using educational TV use both broadcast and cable to allow flexible viewing times.

Cable Television

Cable television, which is in place in more than 100 Michigan communities, is also a major part of a system being used to deliver educational television. Cable TV, with dedicated educational channels, allows a telecourse to be shown several times and provides the most flexible access for students in a community with cable TV.

However, cable public access programming could be severely limited under an expected U.S. Supreme Court challenge which would restrict government regulation.

Home and Media Resource Libraries

Another use of educational television which has unlimited potential is the video-learning center or at-home use of educational video tapes for discrete learning experiences. Also, if students miss a class, many institutions allow them to view video taped lectures at libraries or media centers.

Since video recorders now outsell every other home appliance, home use of video tape is becoming more practical. For example, college or vocational educational students can watch and listen to Margaret Mead discussing anthropology, learn how to weld, or repair a 1984 Cutlass ignition system all through video tapes.

Currently 10 percent of the homes in America have home video players, compared to only seven percent of homes with computers. Experts believe that the ownership rate will accelerate, resulting in more entertainment and education taking place in the home.

Paralleling this is the significant restructuring of the video software market where now only 25 percent of 3,400 home rental video titles are X rated. In addition, many continuing education courses such as real estate and medical updates can be viewed at home on video tape.

Even the New York Times runs reviews of new video tape releases each week. For example, for $64 you can purchase an adaptation of James Fennimore Cooper's Leatherstocking tales, or for $30 you can watch in the comfort of your home, a 60 minute history of British Rock and Roll.

Private Retraining Efforts

Television also enables continuing education courses to be held at MESC branches, state offices, hospitals, clinics and job sites for professionals who are in need of retraining or continuing education. For example, electrical engineers trained in the 1960s are quickly finding out that more than one-half of the college courses they took have been made obsolete due to technological advancements. Engineers at Dow in Midland could be trained in the new electrical technology at their current work sites by using television instruction originating from anywhere in the state. Also, hospitals could offer the popular child-birthing classes through television, enabling parents to either stay at home or watch it at a variety of convenient neighborhood sites.

Teleconferences

Telecourses and teleconferences also can allow concurrent state-wide educational seminars on such diverse topics as quality of worklife, robotics or marketing of a new product. Universities and colleges, with their geographic diversity and experience in teaching, are the logical locations for teleconference facilities. And, if colleges and institutions don't become teleconference sites, private groups like Hilton and Sheraton hotels, recognizing the potential, will.

Educational teleconferences, using the burgeoning satellite network, are becoming more popular, especially in offering continuing education programs for professionals.

There currently exists a national network of teleconference sites at 101 colleges and universities across the nation, including Michigan State University. However, the use of teleconferences has had mixed reviews with major successes and with major flops resulting in last minute cancellations.

As an example of a success, a national union hosted a teleconference with some 35,000 persons simultaneously viewing presentations with the capability to ask the presenters questions. In addition to cable, PBS broadcast, closed circuit, micro-wave and satellite transmission, there are almost unlimited combinations of delivery systems and methods for educational television.

Explore Need for State-Wide Coordination

Much of what currently exists in television-related education is proceeding at an ad-hoc basis, typically at the urging of specific individuals at specific institutions.

There are many problems in that process, including unnecessary competition, duplication, poor quality programming, excessive costs of production and equipment outlay.

Therefore, an option many states and geographic areas have considered is the formation of a statewide coordinating group or regional consortium to help curtail costly competition, encourage research, fund innovative programs and to encourage and coordinate activities at a state level. Other states have formed consortiums and networks for varying reasons, including the cost savings available through group buying and shared production and to assure broad geographic distribution.

Two notable examples of this in Michigan are ETOM, the Educational Tele-consortium of Michigan and the successful Southeastern Michigan Educational Television Consortium (SEMETVC) operated in conjunction with WTVS, Channel 56.

SEMETVC provides higher education offerings to 1,700 students through the cooperation of nine community colleges, a public broadcast outlet and 47 cities' cable offerings.

ETOM, which has 16 of the Michigan community colleges in membership, is a force with the community college network working to successfully combine telecommunication technology and education.

Programs like these have made Michigan number one in terms of PBS revenue generating power and second in enrollment.

What's the Future Like?

What does the future hold for television in Michigan's educational process?

It holds exactly what we want it to. For example, there is no reason why a community college or university couldn't offer specific training programs for business, on-site, during lunch hours using local cable or a fixed-site system. Colleges could "beam" programs into the K-12 system or host national teleconferences. SEMETVC for example, is using a $450,000 Job Training Partnership Grant to broadcast 24 hours of programming on work, unemployment and training to 400 sites in Southeastern Michigan.

However, for many colleges and universities, the catalyst for such innovative programming would have to be a statewide coordinating group. Massachusetts and Wyoming, for example, both have governors' commissions which act as advisory groups on television in education.

Michigan might benefit from formation of such a statewide umbrella group or consortium working under the auspices of a governor's advisory body. This group could first inventory the existing televised educational systems that are already in place at our private and public colleges and universities. An inventory of existing systems, techniques of distribution, enrollment, costs and expansion plans is urgently needed.

Since Michigan currently has had limited success in attracting grant dollars in telecommunications, a coordinated effort also could seek funding from both state and national sources. For example, Michigan was shut out of any awards in a recent major $15 million foundation grant program for educational television. Possibly one reason for this is limited experience in producing educational telecourses.

An additional role, played by similar groups for other state networks or consortiums, would be the design, execution, promotion and marketing of telecourses produced in Michigan by Michigan people.

The group could also assure that quality productions are purchased and could, through the use of a consortium, keep those purchase costs down by group discount buying. This group buying at a state level also would assure all public and private institutions have access to quality productions. Currently, many smaller institutions are unable to offer telecourses because of high costs or lack of availability through PBS stations.

A consortium also could be a clearinghouse for information on the use of television in the classroom and could be used as a catalyst in overcoming the typical faculty concern and resistance.

Core Curriculum

Television in the classroom has a lot to live down, thanks to the talking head productions of the 50s, 60s and 70s, but the design, quality and production of the modern telecourse has vastly changed.

Studies have shown today's quality telecourses offer a structured learning situation that enables students completing the courses to do as well academically as those in regular classes.

Telecourses and television-related learning experiences have proven they can deliver low cost flexible programs in a community or a region. They have the ability to offer high quality, discrete learning experiences or broad mass exposure.

Telecourses are systematically designed to provide quality learning situations and can also assure top notch instructors.

Faculty/Staff Reception

Let's look at an area of major concern -- faculty and staff reception. There is much to do in this area, for without faculty and administrative support televised education will have a tough time getting acceptance.

Most often faculty are resistant to educational television. Many professors feel they lose some integrity by using television, others feel that technology is squeezing them out. Generally, professors protect their classroom, for it is in that arena they can be in absolute control.

Many professors feel that their mark or personality is not on the packaged television production.

On the other hand, many instructors who have used a well-designed integrated telecourse find that they actually have more time to return to one-on-one learning situations and that they can turn their attention to specialized or supplemental areas by using telecourses.

Many college and university administrators believe that educational television and telecourses will save money and enable them to attract more of the non-traditional students, high school drop outs, minorities, women at home with minors, allowing them to shore-up sagging enrollments.

Early research however, shows just the opposite situation might be the case, with those most likely to take education television offerings being those who are already well-educated.

Practitioners have found telecourse education takes a disciplined study approach and is not for everyone. At best, telecourses might be best used to pique the interest of non-traditional students for education. Without a doubt, much of the success of telecourses is dependent on whether or not the course is required or part of a core curriculum.

In addition to the coordinating aspect of a central consortium, a consortium could look at the potential of the state sponsoring and funding several high quality productions that would have wide distribution in Michigan and in other states.

Three suggestions have been:

o A 26-part Michigan history production that would be completed in time for the state's 1837 sesquicentennial celebration;

o A Chautauqua series focusing on the changing workplace and quality of worklife and including some of Michigan's most respected businessmen, educators and labor leaders; and

o A natural history production featuring the evolution and ecology of the Great Lakes.

In addition to establishing Michigan as a quality-production site, a quality production effort would significantly upgrade our national reputation and put us on grade with consortiums such as those in Dade County, Florida, Dallas and Maryland.

The availability of high quality telecourse productions also would give us the practical means to encourage coordination through the formation of a state consortium. For example, a history class on the sesquicentennial could be shown at both the K-12 level and college level using varying textbooks and workbooks. Availability of the courses could be made as an incentive for joining the consortium.

This opportunity would give us the needed vehicle to experiment with the delivery system of telecourse and televised educational programs.

Overall, the common characteristic that makes certain colleges' and universities' educational television effort stand out is the commitment from top management or administration. Without that commitment, Michigan will continue to work in an ad-hoc way.

Advantages and Disadvantages of Television in the Classroom

There are several inherent advantages to developing and using educational television in Michigan:

- Ability to use existing community locations for video centers such as libraries, grade schools, high schools, community colleges and private sites;
- Holding down cost of commuting;
- Assuring geographic access;
- Potential savings through cooperative efforts;
- Vehicle for increasing cooperation between private sector and higher education;
- Better delivery of federal job training monies for similar state training programs;
- Flexibility in meeting continuing education requirements and retraining for adult full-time workers; and
- A national reputation for delivering innovative telecourses to college and non-college students.

There are some disadvantages if the system continues to grow without organization or direction:

- Duplication of facilities and equipment (an intermediate school district duplicating the television broadcast facilities of local university or community college);
- Lack of national recognition;
- Excessive and unnecessary costs; and
- Lack of quality materials at some institutions.

What keeps a coordinated effort from occurring naturally?

A similar situation exists for educational television that exists in most other aspects of the issues facing higher education, and that is Michigan's autonomous system does not encourage or reward cooperation.

Also, faculty can be highly resistant to using telecourses. One administrator of a college telecourse system said in 10 years he has never had a faculty member suggest using a televised lecture or telecourse. Faculty need to be shown the advantages of telecourses.

Still to be worked out satisfactorily are union contracts, accreditation and royalties for faculty who "star" in telecourse productions.

Probably in the back of the mind of most who are involved in educational television is the thought that if our colleges and universities don't get involved in using the medium, the private sector will. Knowledgeable administrators believe it's only a matter of time before the private sector trainers see how much money can be made by using television as a medium for education.

The next 16 years will be a measure of success for television in the classroom, because as it is coupled with the computer and educational software, television will follow Dick and Jane from Kindergarten through college; teaching them to read, write and do arthroscopic surgery.

A SUMMARY OF THE STATEWIDE PUBLIC COMMENT SESSIONS

STATE OF MICHIGAN

JAMES J. BLANCHARD, Governor

COMMISSION ON THE FUTURE OF HIGHER EDUCATION

North Ottawa Building, Box 30026, Lansing, Michigan 48909
517-373-4565

May 14, 1984

MEMO TO: Commission on the Future of Higher Education

FROM: James K. Robinson, Chairman

SUBJECT: Statewide Public Comment Sessions

The Commission scheduled six public comment sessions across the state to receive testimony on the Agenda for Discussion: The Midyear Progress Report of the Governor's Commission on the Future of Higher Education. Several commissioners, in addition to staff, conducted each of these sessions. A broad representation of higher education and community leaders as well as legislators attended. The comments from these sessions, as well as written input and organizational presentations, were thoughtful and diverse. The common theme throughout the sessions was a concern for maintaining quality and reinvesting in the entire higher education enterprise. The Commission was also commended generally for the thoroughness and depth with which the issues are being examined and was urged to persist in seeking comprehensive, specific, prioritized recommendations.

Student sessions were also conducted to seek input on issues regarding instruction, occupational supply and demand, access and financing. Separate day-long discussions were held with four-year and community college representatives.

Attached are summaries of the public testimony, written communications, organizational meetings and the student sessions. A complete record of all materials submitted in writing is available in the Commission office for review.

TRAVERSE CITY PUBLIC COMMENT SESSION ON MIDYEAR REPORT

APRIL 30, 1984

COMMUNITY COLLEGE SPOKESPERSONS

Robert Graham: Business Manager, North Central Michigan College

- NCMC's purpose is training/retraining of individuals through traditional programs or for specific businesses.
- To meet the needs of the individuals and businesses, community colleges need additional money to keep up with technology.
- Financial assistance should be increased to assist students with the increasing cost of a postsecondary education.
- The average age of NCMC students (the high twenties) and the large geographic area that NCMC serves, indicates the major role NCMC has in providing access.

Shirley Okerstrom: Trustee, Northwestern Michigan Community College

- Enrollment patterns have been affected by the increasing cost of tuition.
- Lack of state support for capital outlay cost has a detrimental impact on programs.
- Community colleges are an inexpensive avenue to higher education for non-traditional students and training/retraining programs impacting Michigan's economic development
- NMC's "2+2" program allows four-year colleges to offer programs to many who otherwise could not participate.

FOUR-YEAR COLLEGE AND UNIVERSITY SPOKESPERSONS

Patrick Wilson: Trustee, Michigan State University

- Governor, Commission and legislature must "maintain, enhance, preserve" faculty resources to maintain Michigan's state and national image.
- State government cannot permit any further erosion of our higher education physical plants and research facilities.
- Postsecondary remedial services should be provided at a local level.
- We must preserve the residential campus as the center of higher education in Michigan.

ORGANIZATIONAL REPRESENTATIVES

Robert Large: Michigan College and University Placement Association

- MiCUPA should develop a statewide report on student placement.
- MiCUPA's survey, assessing the availability of placement follow-ups, showed that most institutions prepare follow-up reports, although style and timing varies.
- MiCUPA will be formulating plans to continue this reporting project.

PRIVATE CITIZENS

Craig Flickinger: Former student at Grand Valley State College

- Advocated the need for maintaining a liberal arts curriculum.

DETROIT PUBLIC COMMENT SESSION ON MIDYEAR REPORT

MAY 1, 1984

COMMUNITY COLLEGE SPOKESPERSONS

Dr. Stuart Bundy: President, Southern Eastern Michigan League of Community Colleges
* Community colleges should be designated as the major agents for job training and retraining.
* Unless community colleges can afford modern equipment and laboratories, they will be unable to train blue collar workers and industries will leave Michigan. Thus, the moratorium on capital outlay expenditures should not have been initiated.

Ron Campbell: President, Monroe County Community College
* Any changes in role/mission statements of two-year institutions should recognize (1) liberal arts are important for all college students; community colleges should not be limited to vocational/technical training, and (2) community colleges should continue their transfer function.
* It is unlikely that the legislature will use the appropriations process to enforce role and mission recommendations.

Harley E. Gillett: Instructor, Macomb Community College
* Commission's final report should address the duplication within each institution. Institutions need guidelines to prevent various disciplines from offering different versions of the same courses.

Dr. Richard McDowell: President, Schoolcraft College
* Transfer programs between two and four-year institutions are important and of high quality.
* Cross registration programs between the two sectors enhance cooperation.
* Two-year institutions need support for building maintenance and equipment purchases.

FOUR-YEAR COLLEGE AND UNIVERSITY SPOKESPERSONS

Dr. David Adamany: President, Wayne State University
* Higher education should provide clear guidance regarding admission criteria for K-12 students and warn poorly prepared students that they may not have what it takes to graduate from college.
* Colleges of Education should raise admission and graduation standards. Subject matter rather than methods courses should be emphasized.
* Quality undergraduate education is best structured around a core curriculum ensuring exposure to the liberal arts.
* Higher education funding should be more clearly targeted. Currently, the system is underfunded by $250-300 million annually.
* Quality is enhanced by institutional autonomy. Future Commission publications should underscore the benefits of a constitutional structure built on institutional independence.

Dr. David Adamany continued

- * Any limits of role/mission statements should be confined to graduate and professional schools. Institutions must expand their roles/missions to better serve students who are "placebound" (must attend nearby institutions).
- * If Michigan is to achieve its economic development goals, new special purpose (technical) buildings will need to be built. New instructional facilities should not be necessary.
- * Improved funding must be accompanied by the elimination of duplication. A distribution of programs across the state must be preserved. Cooperative programming and shared faculty can satisfy the former goal. Allegations of duplication should be supported by valid statewide data.

Dr. Joe Kent Kerby: Dean, Business College, Eastern Michigan University

- * Eastern Michigan University needs a new facility for its Business College and can raise half of the $8-10 million needed. Present facilities are inadequate for the case method and inadequate office space negatively affects recruitment. Since Eastern Michigan University's initial request for building funds was made in 1968, enrollment in the Business College has doubled.

Gary Miotke: President, Michigan Collegiate Coalition

- * Students need input into political and educational decisions. Students lack access to governing boards and faculty committees. SB658 would prevent students from lobbying and should not be approved by the legislature.

Thomas Roach: Member, University of Michigan Board of Regents(speaking for himself)

- * Student grants should be modified to either halt differential grants for private students, or support students at all institutions with public funds.
- * To preserve the quality of education provided by the Big Three, public funds should be earmarked.
- * Asserted that enrollments will not decline the projected 10 percent.
- * There is public support to replace funds lost by institutions due to Executive Order cuts.

ORGANIZATIONAL REPRESENTATIVES

Jack Avignone: New Detroit, Inc.

- * Linkages between K-12 and higher education should be strengthened and K-12 education should be improved. In making its recommendations, the Commission should not rob K-12 of resources.
- * Mason-Miller recommendations should be implemented.
- * The Commission should recommend ways for business and the corporate/industrial sectors to become involved in higher education and K-12 education.
- * More public financial support is needed for higher education.

Evelyn Brown: speaking for Robert W. Spencer, President, Detroit Economic Growth Corporation

- * Higher education contributes to economic development through training, retraining, and the attraction of quality top-management personnel.
- * Michigan must undertake first-rate research.
- * Higher education is important for minorities in achieving upward mobility and social equality.

Detroit continued

PRIVATE CITIZENS

Craig Douglas Lee: Student, Wayne County Community College

- Standards for transfer from two to four-year institutions should be uniform throughout the state.
- Tuition formulae discriminate against middle-class families.
- Child care facilities funded by the Department of Social Services are needed for students with small children.
- AFDC applicants should not be required to count financial aid as income. This practice acts as a barrier to access and affordability.

Doris Seifert

- Supported the Commission's endorsement of a balanced education which does not overemphasize technical training.

James A. Wilkins

- Recommended that expenditures for faculty be correlated with state's economic development goals.

SAGINAW PUBLIC COMMENT SESSION ON MIDYEAR REPORT

May 2, 1984

COMMUNITY COLLEGE SPOKESPERSONS

Hal Arman: Assistant to the President, Delta College

* Delta College is concerned about the focus of the progress report on downsizing.
* Providing access is difficult and costly. Delta's services to encourage access (for which it gets little state support) include: telecourses; use of facilities for non-traditional learning services, such as in-service training for dentists; continuing education; and a public television station. These require increased state funding.

Gene Arnold: Dean of Administration, Delta College

* Delta College and Saginaw Valley State College cooperate extensively. Examples of cooperation include sharing of library resources, specialized equipment, campus police, television course, common academic calendars, articulation agreements to facilitate transfers of students, on campus publications, computers, postal service, off campus centers, staff development, joint purchasing, dormitories and placement activities.

Don Carlyon: President, Delta College

* The independence of Michigan's postsecondary system must be maintained.
* State law says that the state should adequately fund community colleges. Since state funding for higher education is low relative to other states, the state has not met its obligation to adequately fund community colleges.
* The state is not meeting the "spirit" of the Headlee (sic) amendment (funding for local government units) although technically the constitutional requirements are being met. Technically, the provision requires a constant proportion of the state budget to local units of government, which includes community colleges. Since funding for community colleges themselves has declined, Dr. Carlyon concludes that the "spirit" of the constitutional amendment has been violated.
* A tax increase is not necessary; the state should reorder its priorities.

Annette Deibel: Board Member, Delta College

* The independence of Michigan's higher education system has contributed to excellence.
* Ms. Deibel commends the progress report for focusing on women and older students.

Ellsworth J. Duguid: Dean of Student Services, Delta College

* FTE enrollments have increased continually since 1979.
* Career development and placement services should be expanded.
* 35 percent of the students eligible for financial aid did not get it, due to lack of federal and state financial aid.
* More state funding is needed for counselling and services to handicappers.

Saginaw continued

Dr. Robert Rue: President, C. S. Mott Community College
* "Turnaways", potential students who have applied for a course or section but are unable to take it, should be included in enrollment projections.
* Typically, community college students are women, older, interested in gaining employment.

FOUR-YEAR COLLEGE AND UNIVERSITY SPOKESPERSONS

Charles B. Curtis: Member of the Board of Controllers, Saginaw Valley State College
* There must be some mechanism to control cost. Raw data on programmatic cost variances may not be an accurate measure of effectiveness. Cost differences between programs are often the result of historical decisions regarding staffing and teaching methods.
* Cost savings will be achieved by reducing salary-related costs and would best be achieved by eliminating small classes and programs, rather than entire institutions. Closure would simply shift many students from one institution to another and would deny access.
* The Commission should examine the effect on enrollments due to the price differential between two and four-year schools. Students increasingly take basic courses at community colleges because tuition is less. The result is that public four-year institutions are losing enrollment and must increase tuition to fund the remaining high cost programs, thereby aggravating the price differential.
* Good faculty morale is important. The state and institutions should provide for individual aspirations, adequate equipment and security.

Marge Darger: Board of Fellows, Saginaw Valley State College
* Ms. Darger is a graduate of SVSC and was an older student.
* Regional schools such as SVSC are important to ensure access.

Jack Ryder: President, Saginaw Valley State College
* Every part of the state should have high quality programs at the two, four and masters degree at a regional level. A national study shows that one half of all entering freshmen attend a college that is no more than 50 miles from their home. Older students are tied even more closely to their communities.
* Some program duplication is desirable, especially to ensure geographic access.
* The National Science Foundation is studying technology transfer mechanisms at SVSC as potential models for other small colleges. Using state seed money, SVSC operates a Business and Industrial Development Institute, and a Research and Development Corporation.
* The Commission should not assume that funding for higher education will retain the same proportion of state general fund. To support excellence in education, it may be necessary to reorder state priorities or raise additional taxes.

LANSING PUBLIC COMMENT SESSION ON MIDYEAR REPORT

May 3, 1984

Senator William A. Sederburg: Chairman, Appropriations Committee on Higher Education

- A working task force from Michigan State University and Lansing Community College makes 24 recommendations dealing with economic development, student needs, quality and occupational supply.
- To implement the recommendations of the Commission a joint legislative committee should be formed.

Elvira M. Wilbur: Professor, Michigan State University

- State should finance consortia among institutions, college placement offices, regional and statewide summer professional development seminars, and financial aid for graduate students.
- Department of Commerce should fund a "Say Yes to Michigan Education" campaign.
- There is a need for professional development activities for faculty and staff, including in-state visiting professor programs and cross training.
- A college options program should be created, providing week-long summer seminars for high school sophomores and juniors.

Dr. Dale M. Herder: Dean of Administration, Lansing Community College

- Higher education funding should be targeted according to specific institutional roles and functions.
- Community colleges should be deliverers of ADULT basic literacy skills including math, adult occupational training and retraining.
- State should be redistricted so all citizens will live within a community college district.
- Vocational/occupational data base should be established and Department of Education should set up an inventory of existing postsecondary facilities and equipment as basis for decisions on future capital investment.

Otto Krause: Director of Engineering Research, Michigan State University

- More money is needed for research and less for bureaucratic administration.
- Selective "upsizing" is imperative; money should be spent on academic excellence at the top institutions.

Charles Krupka: Associated Students of Michigan State University

- The land grant mission is in jeopardy because of soaring tuition costs.
- Quality will be lower due to the lack of resources.
- There is a need for capital outlay expenditures.
- There is a need for action to ensure the accreditation of the College of Veterinarian Medicine.

Christopher Sower: Professor Emeritus, Michigan State University

- He recommends a participatory research and development program dealing with issues of student incentive, cooperative relationships between institutes and lessening antagonism between faculty and administrators.

Lansing continued

John W. Watanen, Jr.: Vice President, State Board of Education
- The State Board has broad authority over all areas of education and this role should be reinstated, particularly for data base function and review responsibility.
- Former higher education commissions were ineffective because they avoided assigning responsibility for planning and coordinating postsecondary education to the State Board.

H. J. Prince: Executive Director, American Association of University Professors
- There will be a critical shortage of faculty by the year 2000, especially in high demand areas of the economy.
- Faculty compensation needs to be increased.
- Tenure needs to be strengthened.

Marvin Grandstaff: President, American Association of University Professors
- If the Commission considers modifications in tenure, it should do so cautiously and consult with academic community, especially AAUP.
- Faculty is the appropriate guardian of academic freedom.

Dr. Philip G. Ward: President, Glen Oaks Community College
- He recommends reexamination of state's capital outlay funding as it relates to funding of community colleges. There is need for maintenance and remodeling.
- Glen Oaks has faculty member working exclusively with area businesses to provide training where needed.

Gladys Beckwith: Chair, State Board for Community and Junior Colleges
- The State should contribute to community colleges to keep tuition costs down (50-50 split between state and local).
- Part-time students are not receiving financial aid. Aid should be increased, and out-of-district costs minimized.
- The open door policy may be threatened by basic competency tests--these should be used only in conjunction with remedial education.

Tom Bernthal: Executive Director, Michigan Community College Association
- Community colleges should be designated the primary delivery system for training, retraining and upgrading.
- The Commission should study sufficiency of state appropriations, legislative enactments, and student financial aid.
- He supports a funding formula based on enrollment, program costs and local/state funding responsibilities.

Dr. Clyde Letarte: President, Jackson Community College
- There is danger of tuition rates being so high as to exclude students.
- Repairs and renovation of facilities are needed.
- Community colleges have three functions: college transfer, career training and community service.

Lansing continued

John Roy Castillo: Acting Executive Director, Commission on Spanish Speaking Affairs

- * Need for qualified Hispanics on governing boards, faculty and staff.
- * Financial aid must be improved--unmet need should be shared in proportion to student's resources.
- * More cooperation is needed between two and four-year colleges so transfer without loss of credit is easier.
- * Partnerships with secondary schools can increase the number of youths completing high school, and improve the caliber of their education.

Judy Gentile: Office of Programs for Handicappers, Michigan State University

- * Funding for handicappers needs to come from different sources. Financial aid from rehab services has been withdrawn.
- * MSU is not barrier free. Information on access for handicappers at state institutions is inaccurate.
- * She approves Commission's handicapper definition in the progress report and supports its comment on lack of accurate, adequate handicapper data in the state.
- * Scientific advances, high tech have made it possible for more handicappers to attend college.

Eric A. Gentile

- * Changes in workplace mean more job opportunities for handicappers who need access to higher education to take advantage of this. Special maintenance funding should be used to improve accessibility.
- * The Plainwell training facility is no longer relevant and should be converted to a correctional institution.
- * There should be an end to separate handicapper programs.
- * The progress report omits a statement on the lack of preparation for handicappers in the K-12 system, and the need for this.

Rose Mary Simon

- * The Commission should include a statement stating that handicappers can produce if they are assisted.

Gerald C. Beckwith: Attorney

- * A major omission in the progress report is discussion of institutional autonomy which limits public accountability, prevents coordination and promotes competition for funds.
- * He supports new funding approaches, including state funding authorities for financial aid.
- * State's higher education system is over-built, resulting in excessive tuition and "cannibalism" within the institutions in order to provide new programs.

GRAND RAPIDS PUBLIC COMMENT SESSION ON MIDYEAR REPORT

MAY 4, 1984

Representative Thomas Mathieu: Chair, House Appropriations Sub-committee on Community Colleges

* Higher education in Michigan is a network of two and four-year, public and private institutions and the politics of the network must be recognized.
* The west side of the state feels that it has been unfairly treated and will fight efforts to downsize institutions like Grand Valley State College.
* We can't play cheap with higher education. Move toward funding and budgeting tied to criteria. The legislature must be confronted with formula funding.

Representative Vernon Ehlers: House Committee on Colleges and Universities

* Downsizing must be done carefully lest the best faculty be driven away.
* It is unlikely that great funding increases will occur in the face of great needs in health, welfare and K-12 education.
* Roles and missions statements will provide guidance for distributing funds among institutions.
* We must recognize that basic research is needed if we are to build a new industrial base.

COMMUNITY COLLEGE SPOKESPERSONS

Dr. Walter Browe: President, Lake Michigan College

* Community colleges are the key to economic recovery but they need additional state funding to support programs, equipment and facilities.
* Benton Harbor has unique needs as the most distressed community in Michigan.
* A good data base on community colleges already exists.

Cornelius Eringaard: Executive Vice President, Grand Rapids Junior College

* The Commission report neglects community college's special needs: (1) capital outlay, (2) the moritorium on new program offerings, and (3) quality of education.
* The report emphasizes economic development excessively.
* He advocates more state scholarships and grants, especially competitive and for displaced persons.

William Spencer: Vice President, Southwestern Michigan College

* There is strength in Michigan's multi-faceted, autonomous system.
* Community colleges have been underfunded, especially in capital outlay.

Herbert M. Stoutenburg: President, Montcalm Community College

* Community colleges are grass roots institutions with flexibility in helping people reach their potential.
* Special problems include the rural poor, delayed maintenance and rising tuition.
* A one-time funding of $100,000 for each institution with less than 1500 students is needed.

Grand Rapids continued

FOUR-YEAR COLLEGE AND UNIVERSITY SPOKESPERSONS

Arend Lubbers: President, Grand Valley State College

- The recession removed most or all of the unnecessary duplication.
- Use incentives to encourage consortia based on self-interest.
- Grand Valley State College has a clearly defined mission that can be a model for formula funding.
- The Commission's scenario of the 1990's is too pessimistic and should be rejected.
- Grand Valley State College has growing enrollment, works closely with employers and community groups in curriculum development, has purchased the land and has the cooperation of the community colleges to create a downtown center.

Maxine M. Swanson: Chair, Grand Valley State Board of Control

- Grand Valley State College has broad community support as evidenced by working relationships with other institutions in the region and the business, industrial and labor constituencies.
- Do not use a data base to force uniformity among institutions.

The Honorable Gerald R. Helmholdt: Mayor, City of Grand Rapids

- Grand Rapids needs convenient access to four-year degrees. GVSC should be allowed to build a downtown center.

Richard D. Bailey: Manager of Personnel Administration, McGraw Edison Co.,
Clarke Division

- GVSC students are performing an audit of office productivity and facility management. Clarke is very pleased with the project.

Walter S. Sowles: Development Director, Square Real Estate Inc.

- Grand Valley State Center for Economic Expansion and Job Creation is a cooperative effort of the private sector, government and higher education.
- The Commission should recognize the importance of community-based institutions. This initiative should be encouraged rather than hampered by a moratorium on new programs.

Linda C. Johnson: President, Grand Rapids Board of Education and
Dean of Students, Grand Valley State College

- Grand Rapids Junior College and Grand Valley State College work together to coordinate programs and make higher education more accessible to the people of Greater Grand Rapids.
- Grand Rapids needs a permanent facility for GVSC.

Glen Walters: Past President, Herman Miller, Inc.

- Area employers need a technologically aware workforce. The engineering technology program expansion received corporate contributions ranging from $1000 to $75,000.

Grand Rapids continued

Greg Osmun: Grand Rapids Associate Superintendent
* Improved handicapper accessibility results in tax savings and an improved quality of life for handicappers.
* Support GVSC retraining of teachers who are being laid off. One hundred percent of GVSC's graduating special education students are already hired.

Cornelius Bykerk: Kenowa Hills Public School Counselor
* West Michigan needs both Grand Rapids Junior College and Grand Valley State College, who have excellent relations with K-12 community.

David Allen Conklin: Student Senate, Grand Valley State College
* Students need better means of providing input to administrative decisions.
* GVSC is a high quality institution providing hands on experience in television and radio. It has outstanding services for handicappers.
* Give us the funds to complete the downtown center.

Richard Gillett: Corporate Officer, Old Kent Bank, and Chairman, Downtown Development Authority
* There is great importance attached to the downtown center for GVSC through a multiplier effect.
* Provide a challenge grant to be met by private contributions for the downtown center.

Charles Burkholder: Executive Director, Family Service Association of Kent County
* Do not restrict the GVSC services. The need for a Masters in Social Work at GVSC is great since it accomodates both working adults as well as full-time students.

ORGANIZATIONAL REPRESENTATIVES

Joseph D. Powers: Senior Vice President, Grand Rapids Area Chamber of Commerce
* Higher education contributes 3200 jobs and a $35 million payroll in the Grand Rapids area. It provides the educated labor force needed by area businesses and the graduate-level courses needed to attract and retain top-level employees. It also provides technology-transfer through faculty consulting and enhances the quality of life. The vocational schools provide tailored courses to keep people up to date.
* Business's preference is for a consortium of higher education institutions, offering a diversity of courses and programs.

Terry Lint: UAW representative
* Affordability and accessability are the key issues for West Michigan.
* Costs must be controlled but education needs proper funding so working people can afford to educate their children.

Grand Rapids continued

Charles Holman: Michigan State Conference of NAACP Branches

- "Quality" is a code word to screen out minority applicants. (Note a 40 percent decline in minority admissions at the University of Michigan.)
- Institutions must provide access and supportive programs for minority students.

PRIVATE CITIZENS

Gary Lewis

- The Commission should emphasize the teaching role of faculty and accountability of faculty and administrators.

MARQUETTE PUBLIC COMMENT SESSION ON MIDYEAR REPORT

MAY 4, 1984

Edmund Vandette: Treasurer, State Board of Education
- The State Board of Education has, both constitutionally and statutorally, the leadership, general supervision, planning and coordination authority over the public colleges and universities.
- The State Board should advise the Executive Office and the legislature on financial requirements for higher education, and program review.
- Adequate funds should be provided for the State Board to carry out these duties.

COMMUNITY COLLEGE SPOKESPERSONS

Robert Bennett: President, Gogebic Community College
- Community colleges are the primary delivery system for job training and retraining, thus requiring increased financial support in terms of plant maintenance and student financial aid.
- Community college instructors require retraining and professional development.
- Need for follow-up data to be collected state-wide about graduates of community colleges.
- Gogebic's role is crucial for access to education for Upper Peninsula residents.

Joe Heirman: Chair, Board of Trustees, Bay de Noc Community College
- Need more physical space, especially for a Learning Resource Center
- Concerned about lack of state funding for maintenance/repairs of facilities.
- Increasing tuition prices low-income students out of the market.
- The Intermediate School District is competing with the community college for the same vocational education programs.

Edwin Wuehle: President, Bay de Noc Community College
- Argued for specific role and mission statements, allocating job training and retraining to community colleges, rather than four-year institutions.
- Supports institutions forming training partnerships with the private sector, and cited the "Contracting With Business and Industry Program" at Bay de Noc as a successful example.
- Lack of adequate student financial aid for community college students is exacerbated by the channeling of significant public funds for scholarship and tuition assistance programs for private institutions.
- Supported need for improved data base, especially concerning employer needs.

FOUR-YEAR COLLEGE AND UNIVERSITY SPOKESPERSONS

David Carlson: President, A.A.U.P., Northern Michigan University Chapter
- The tenure system protects educational excellence.
- Northern has reduced full-time faculty from 340 to 280 through attrition and early retirement programs, rather than an attack on the tenure system.

Gary Caspardine: Professor, Michigan Technological University
- Accreditation of engineering programs should take into account employer needs. Employer advisory committees are important contributors to curriculum development.

Marquette continued

PRIVATE CITIZENS

William Gregory: President, Edison Sault Electric Company
- Lake Superior State College provides geographical access to students in Eastern Upper Peninsula.
- Lake Superior State College has strong partnerships with area business, such as the Aquatics Lab (in partnership with Edison Sault).

James Knight: President, Ultraspherics, Inc.
- Lake Superior State College is crucial to the creation of permanent, year-round industrial employment opportunities in the following ways: Industrial Incubator Program, providing low-cost space for new manufacturing ventures; provision of consulting services and lab facilities; access to trained personnel and training opportunities; and perceived advantages of a college town in quality-of-life concerns.

Roy R. Warren: President, Central Savings Bank at Sault Ste. Marie
- Stressed the economic conditions in the region: 26 percent unemployment and per capita income of only 70 percent of state average.
- LSSC has strong economic impact on region; for example, 20 percent of total sales in Saulte Ste. Marie, 28 percent of per capita employment.
- LSSC has strong local support, as indicated by generous private support by area residents.
- LSSC's Industrial Incubator Program has helped bring new businesses to the area.

WRITTEN COMMENTS ON PROGRESS REPORT FROM ASSOCIATIONS AND INDIVIDUALS

Saundra Florek, President, Michigan Association for Higher Education (MEA):
The report is comprehensive and well done. However there are some concerns including:

- Post testing at graduation is questionable.
- Guidelines for core curriculum should be developed separately for two-year occupational, two-year transfer, and four-year degree institutions.
- Fellowships and grants should be provided to upgrade faculty skills and tax credits given to industry.
- Tenure is essential and flexibility is better achieved through early retirement, natural attrition.
- Full funding of the Fiscal Agencies' Investment Needs Funding Model for four-year institutions and 50 percent funding of community colleges is essential.
- A designated amount of job training funds should be allocated to public colleges to meet retraining needs of displaced and unskilled workers.
- There is an urgent need for more equitable distribution of state capital outlay funds.
- Creation of a strategic planning mechanism should include active faculty participation at all levels of decision making.
- "Downsizing" has been taking place for the past five years and it is premature to speculate about closing any higher education institutions.

Kenneth M. Davies, Detroit Attorney:

- Consolidation of educational institutions has to be done and will be, either through mutual action or by attrition.
- Principals must set aside their self-interest and act for the common good.
- The Commission must be specific in outlining the steps required.

William R. Ewald, American Institute of Community Planners and former consultant:

- The Commission's mission should be to achieve a clear perception of Michigan's potential for revitalization, led by higher education; and the Commission should stress creative ways the system and the state can meet the challenge of enormous changes throughout the world.

- Suggests tapping various foundation funds to bring in nationally and internationally known experts to broaden Commission's knowledge of significant world changes and shift from industrial to information economy.

- Academics alone cannot set the course and higher education societies cannot be counted on for more than increased specialization.

Dr. John X. Jamrich, Former President, Northern Michigan University:

- Commends the Commission's progress report as a blueprint for action which is coherent, well organized and well articulated.
- Praises Commission's leadership in a complex setting and the ability of the staff.

STAFF MEETINGS WITH ORGANIZATIONS REGARDING THE MIDYEAR PROGRESS REPORT

American Association of University Professors

- The Commission should keep in mind that downsizing, carried out in the extreme, may produce an undersized system in the late 1990s (when enrollments are estimated to rebound).
- The Commission might want to consider bold public policy options for enhancing enrollments such as a suggestion that unemployed people be encouraged to enroll in colleges and universities.
- The Commission should analyze current state policies which grant aid for students enrolled in private institutions.

Wayne State University Doctoral Club

- In recommending that private business contribute more resources to higher education, the Commission should build in protections against a disproportionate private involvement in educational decisionmaking.
- The Commission should realize the contradictory nature of its rejection of a superboard (given the institutional autonomy built into the state Constitution). This contradiction will tie the Commission's hands as it searches for an agency to enforce program distribution and role/mission decisions.
- Academia values diversity. The Commission should preserve diversity as it attempts to clarify role/mission statements and to prevent duplication.
- In its attempts to narrow role/mission statements, the Commission should avoid limiting the geographic access of older and elderly students to post-baccalaureate degrees.

Collegiate Faculty Association

- The Commission might debate the assertion that the state has an adequate supply of educated citizens and, therefore, that universal access need no longer be a long-range goal.
- The Commission should consider basing its funding formula on programs rather than institutions.
- In its final report, the Commission should reconcile the inherent conflict between quality and universal accessibility.
- Discussions of undergraduate quality and instruction should discuss the developmental objectives of college training and models for motivating high-risk students to enroll and graduate.
- The Commission should distinguish between education and training as it seeks to clarify roles/missions.
- Current role/mission statements, written for institutional audiences, have dubious value. As it seeks to limit roles/missions, the Commission should use an empirical approach; i.e., collect information on each institution's recent achievements.

Michigan Association of Governing Boards

- The state should support more need-based grants.
- A seminar was held with MAGB to discuss the entire report. Chairman Robinson presented an overview and staff conducted workshop sessions and responded to questions based upon review panel designations. Individual staff took notes on suggestions and concerns for consideration in the final report.

STUDENT COMMENT SESSION - APRIL 13, 1984 - LANSING

Each of Michigan's 15 public four-year institutions' student governance organizations were asked to designate two student representatives to attend a day-long student comment session on Friday, April 13, in Lansing. The Association of Independent Colleges and Universities of Michigan also designated five student representatives to participate in this session, which was based on the Midyear Progress Report of the Commission on the Future of Higher Education.

The student representatives expressed the following concerns:

- Students indicated that they had not received adequate preparation in mathematics,English skills, and critical analysis. They strongly supported a required college preparation program with emphasis on mathematics, science, and English.
- Students felt that high school counselors were not sufficiently aware of competencies required for college work, and did not adequately advise students(especially women and handicapper students, who were steered away from the more rigorous courses.)
- Although students supported more rigorous high school requirements (minimum competencies throughout the system) they also indicated the need for remediation at the college level. Dual enrollment with a community college was an appealing option, but only when such institutions were in close geographical proximity.
- Students supported a core curriculum, as outlined in the Progress Report, noting that such requirements allowed for both flexibilty in career goals throughout the undergraduate program, as well as giving the ability to be life-long learners.
- Students were concerned with the quality of instruction, noting that many professors, although competent in subject areas, have had no training in teaching methods. Professors lack skills in lecturing and test construction, for example.
- Students expressed concern that existing support services for handicappers(which were not considered to be adequate) may be threatened by budget cuts.
- Students were concerned about the need for more women and minorities in faculty and administrative positions.
- Students felt that faculty and administration were not sensitive to the special needs and concerns of minority and handicapper students.
- Students felt that information about occupational supply and demand needs to be made available throughout the educational process.
- Half of the student representatives were satisfied with the occupational supply and demand data which was available to them at their institution.

* Students felt that high school counselors were not adequately informed about financial aid information.

* Students expressed concern about limits on student loan capacity.

* Students requested a simplification of student financial aid forms, and filing procedure.

* Students indicated that room and board costs were as important a consideration as tuition, if not more so.

* Information about programs for minorities and handicappers was lacking, both with high school and college student financial aid counselors. Non-traditional students lacked financial aid information and sources.

STUDENT COMMENT SESSION - APRIL 30, 1984 - LANSING

Each of Michigan's 29 community colleges was asked to designate two student representatives to attend a day-long student comment session on Monday, April 30, in Lansing, based on the Midyear Progress Report of the Commission on the Future on Higher Education.

The student representatives expressed the following concerns:

* Students felt that they had received inadequate high school preparation in the following areas: mathematics, reading, writing skills, test-taking skills, study skills, computer literacy and analytical skills. They strongly supported the State Board of Education's proposed high school graduation requirements.

* Students felt that remediation should be the purview of the community colleges, although they reiterated the need for improved high school preparation in basic skills.

* On the whole, students felt that their institutions were adequately providing remediation programs.

* Students supported a state standard for an associate's degree, citing problems in transferability of credits to four-year institutions.

* Students strongly support more wide-spread use of student evaluation of faculty. They indicated general satisfaction with the instruction abilities of their institution's faculty.

* Students felt that the low status of community colleges in the education community adversely affected the morale of both teachers and faculty.

* On-campus support services were perceived as necessary and available for women/minority/ handicapper/adult learner students. Child care programs for student parents, however, were not widely available.

* Actual campuses were considered to be barrier-free; the major problem facing handicapper students is the transportation to campus, especially in urban areas.

* Students felt little information concerning future career options was available, and should be incorporated into the high school curriculum.

* Students knew of the MOIS system, but felt that its existence was not well-publicized amongst other students.

- Students felt that more financial aid information should be made available in high school

- Many students were concerned about the impact of federal regulations on students who receive AFDC; monies granted for books and supplies are deducted from the monthly food stamp allotment.

- When polled, two-thirds of the students felt the State should target monies for tuition stabilitzation; one-third felt monies should be channeled into increased student financial aid.

COMPARISON OF MICHIGAN'S APPROVAL AND REVIEW PROCESS TO OTHER STATES'

STATE OF MICHIGAN

JAMES J. BLANCHARD, Governor
COMMISSION ON THE FUTURE OF HIGHER EDUCATION
North Ottawa Building, Box 30026, Lansing, Michigan 48909
517-373-4565

June 8, 1984

To: Occupational Supply and Demand and Program Distribution Review Panel

From: Paul Reinhart

Subject: Comparison of Michigan's Program Approval and Review Process to Other States'

State government in all states except Maryland, Michigan, Nebraska, and Wyoming review or approve higher education programs. In Michigan, the Presidents Council of State Colleges and Universities reviews and makes recommendations regarding new programs. The following compares Michigan's approach to other states' processes.

	OTHER STATES	MICHIGAN
1. State level new program approval		
A. Process	-46 state governments -Part of budget process -Incremental	-Public colleges: voluntary compliance with Presidents Council review -Public community colleges: none, except for federally financed vocational programs
B. Criteria	-See 2B	-Distinctive characteristics -Quality -Overlap with current offerings -Other similar programs in state* -Enrollment -Career prospects -Resource capacity
2. State level program review		
A. Process	-39 state governments -Reviews conducted by: -Agency staffs -Agency staffs-consultants -Agency staff-institutions	-none

OTHER STATES	MICHIGAN
2. State level program review (continued)	
B. Criteria -Quality, measures include accreditation, faculty-student ratios, faculty expertise, facilities -Need/demand, such measures as student demand, industry needs, supply -Relation to institutional mission -Cost -Productivity -Duplication -Outcomes, such as employment, graduate school admissions, professional exam pass rates	

* Duplication is defined as: "the delivery of essentially the same instruction to comparable students at different classrooms in the same geographical area at approximately the same time.

The duplication defined above becomes 'unnecessary duplication' when the cumulative cost of the instruction could be significantly reduced by merging instruction unless it yields an unacceptable loss of instructional quality or significantly diminishes student access to instruction."

MICHIGAN SOCIETY OF PROFESSIONAL ENGINEERS

TASKFORCE REPORT ON INFRASTRUCTURE

MSPE

Michigan Society of Professional Engineers

P.O. BOX 10214 • 215 N. WALNUT
LANSING, MICHIGAN 48901
TELEPHONE: (517) 487-9388

Please address reply to:

July 3, 1984

James K. Robinson, Chairman
Governor's Commission on Higher Education
North Ottawa Street Building
P.O. Box 30026
Lansing, MI 48909

Dear Mr. Robinson:

Enclosed are three copies of the report of the MSPE Task Force on Infrastructure (Deferred Maintenance Needs) at State Universities. The Task Force has visited five (5) Universities, met with their staff people and reviewed the lists of projects submitted by each University to the Commission.

The Task Force consisted of six (6) Professional Engineers, each of whom has had more than 35 years of experience in various aspects of facility construction and they have done a credible job in analyzing the many projects listed by the five (5) Universities and giving generously of their time, expertise, and knowledge.

The Task Force plans to attend the meeting on Monday, July 9, 1984, to review their findings with the Commission. We trust that the report will be of assistance to the Commission.

The Michigan Society of Professional Engineers (MSPE) has a major interest in all of Michigan's Infrastructure needs. Any additional activities or studies should involve the MSPE private sector Practice Divisions, e.g. Private Practice and Construction. Call if we can be of further service.

Professionally,

Harry

Harry. R. Ball, P.E.
Exec. Dir., MSPE

HRB:klp

Enclosure

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REPORT TO THE COMMISSION ON THE FUTURE OF HIGHER EDUCATION OF THE STATE OF MICHIGAN, DEVELOPED BY A TASK FORCE OF THE MICHIGAN SOCIETY OF PROFESSIONAL ENGINEERS.

I. INTRODUCTION

A report prepared by members of the Michigan Society of Professional Engineers resulting from a request to the Michigan Society of Professional Engineers by the Governor's Commission on the Future of Higher Education is presented to the Commission. This report, is intended as an aid to the Commission in the recommendations of State Funding to the State Colleges and Universities specifically for Deferred Maintenance Projects.

This report is based on guidelines furnished to the Michigan Society of Professional Engineers Task Force by the Commission and serves only as a guide and counseling advice to the Commission.

(Details of the Task Force may be found in V. Appendix, A., of this report)

II. SCOPE OR PURPOSE

The Michigan Society of Professional Engineers (MSPE) was requested by the Commission on the Future of Higher Education (in which the MSPE has a strong interest) to investigate, review and comment upon the costs and validity of deferred maintenance projects and other projects requested by the various State Universities in Michigan.

The Task Force was directed to study the validity of the Deferred Maintenance requests of Michigan State University, Northern Michigan University, Oakland University, Wayne State University, and Western Michigan University, as a sampling of State financed Universities.

III. SUMMARY OF FINDINGS

The projects of five (5) Universities have been classified into six (6) catagories since they do not all fit the definition of Deferred Maintenance. The catagories are as follows:

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I. DEFERRED MAINTENANCE - required because of physical deterioration, which may cause further physical damage and affects the safety of the occupants. (See V. Appendix, B., for detailed definition).

II. CODE REQUIREMENTS - principally fire safety, accessibility to the handicapped, and other mandatory regulations.

III. ENERGY CONSERVATION - This is a changing of various aspects of facilities to conserve energy and operating funds.

IV. CAPITAL IMPROVEMENTS - These projects involve the expenditures of funds for installation of needed facilities.

V. SELF LIQUIDATING - These projects involve facilities which were funded through other than General Fund operating appropriations.

VI. OTHER - Projects deserving consideration, but are not within any of the above classifications.

The projects generally are necessary and of high priority. The Task Force is sure that there are a number of similar projects at most schools that were not identified on their current list. In general, we feel that the estimates shown on the list have been made on a reasonable basis, however, our investigation indicates that some may be low. It should also be recognized that if funding is delayed, the more these costs will be escalated, due to inflation and additional deterioration.

The following chart gives a tabulation of projects by groups for each of the five (5) Universities.

Note: V. Appendix, C., provides details of all Universities, projects, and costs and group classifications.

TABULATION OF PROJECTS BY GROUP AND UNIVERSITY

GROUP I. DEFERRED MAINTENANCE

MICH STATE UNIV		NORTHERN MICH UNIV		OAKLAND UNIV		WAYNE STATE UNIV		WESTERN MICH UNIV		TOTAL	
ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST
185	$26,175,000	53	$ 2,309,000	23	$ 1,622,000	112	$15,289,000	61	$ 3,666,000	434	$ 49,061,000

GROUP II. CODE REQUIREMENT

MICH STATE UNIV		NORTHERN MICH UNIV		OAKLAND UNIV		WAYNE STATE UNIV		WESTERN MICH UNIV		TOTAL	
ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST
3	$ 93,000	1	$ 300,000	-0-	$ -0-	5	$ 655,000	32	$ 2,613,000	41	$ 3,661,000

GROUP III. ENERGY CONSERVATION

MICH STATE UNIV		NORTHERN MICH UNIV		OAKLAND UNIV		WAYNE STATE UNIV		WESTERN MICH UNIV		TOTAL	
ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST
19	$ 1,707,000	4	$ 79,000	2	$ 110,000	1	$ 80,000	7	$ 888,000	33	$ 2,864,000

GROUP IV. CAPITAL IMPROVEMENT

MICH STATE UNIV		NORTHERN MICH UNIV		OAKLAND UNIV		WAYNE STATE UNIV		WESTERN MICH UNIV		TOTAL	
ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST
17	$16,083,000	4	$ 2,638,000	-0-	$ -0-	6	$ 1,310,000	2	$ 210,000	29	$ 20,241,000

GROUP V. SELF LIQUIDATING

MICH STATE UNIV		NORTHERN MICH UNIV		OAKLAND UNIV		WAYNE STATE UNIV		WESTERN MICH UNIV		TOTAL	
ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST
-0-	$ -0-	-0-	$ -0-	1	$ 20,000	-0-	$ -0-	49	$ 8,025,000	50	$ 8,045,000

GROUP VI. OTHER

MICH STATE UNIV		NORTHERN MICH UNIV		OAKLAND UNIV		WAYNE STATE UNIV		WESTERN MICH UNIV		TOTAL	
ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST
2	$ 40,000	5	$11,786,000	1	$ 200,000	13	$ 9,200,000	22	$ 9,747,000	43	$ 30,973,000

GRAND TOTALS

MICH STATE UNIV		NORTHERN MICH UNIV		OAKLAND UNIV		WAYNE STATE UNIV		WESTERN MICH UNIV		GRAND TOTAL	
ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST	ITEMS	COST
226	$44,098,000	67	$17,112,000	27	$ 1,952,000	137	$26,534,000	173	$25,149,000	630	$114,845,000

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IV. TASK FORCE CONCERNS

The Task Force recommends that a general guide be developed for the Commission to utilize for evaluation of the other colleges and universities. Each is unique and deserve individual study such as the Task Force has conducted.

Factors influencing their concerns are:

A. Age of the Physical Plant.
B. Organization of Physical Plant staff and level of associated talent.
C. Academic and functional commitments.

Other concerns deal with the requirement for each University or College to re-evaluate their needs and priorities within the catagories as developed by the Task Force. It should be noted that the original lists were labeled as "Deferred Maintenance" but evolved into six (6) catagories. Estimates should be based on year anticipated for implementation.

Finally, as stated in the letter of transmittal, it is a Task Force concern that the MSPE Practice Divisions be involved, in some form, in the assistance to the Commission for further evaluating, planning, and implementation of the projects.

APPENDIX - A

MSPE TASK FORCE ON INFRASTRUCTURE IN MICHIGAN UNIVERSITIES.

MEMBERS:

Ralph K. Seeley, P.E., Chairman
Retired in 1978 as Director of Building Division-Bureau of Facilities, Department of Management & Budget, State of Michigan. Has broad experience in institutions planning, renovation, and maintenance projects.

Steward C. Barnett, Jr., P.E.
Consulting engineer with experience in engineering, construction, and maintenance of facilities for educational institutions, industry, and public works organizations. Registered since 1949. Former chairman and member of the State of Michigan Barrier Free Design Board.

Edward L. Clary, P.E.
Registered Professional Engineer retired from Buick Motor Division after 36 years in plant engineering projects. Currently consultant on construction, ventilation, energy analysis, and industrial planning. Also the author of several automative technical articles.

Arthur M. Guy, P.E.
Retired engineer from Jackson, Michigan. Many years with Gilbert Commonwealth Assoc., Inc. provided a background of construction, operation, and maintenance, especially in the power, generation, and thermal distribution industry.

Herbert J. Hamilton, P.E.
Retired as a Mechanical Engineer from the Building Division of the Department of Management & Budget. During his more than 30 years as a Registered Professional Engineer, positions he has held include: Instructor of Mechanical Engineering at Michigan State University; Mechanical Engineer in the Oldsmobile Plant Engineering Department; and serving as Chief Engineer for a number of years with a major Mechanical Contractor.

Paul D. Hunter, P.E.
Retired following 34 years of service with State Department of Management & Budget, concluding as Manager of the Engineering Services for the Building Division, which conducted various phases of planning, design, and construction of State Facility programs.

V. APPENDIX - B.

Deferred Maintenance

Deferred maintenance is defined as unaccomplished work involving repairs, rehabilitation or replacement of failed or malfunctioning equipment, systems or components of a building or facility. For whatever reason the maintenance has not been accomplished, because of a lack of resources, through oversight, or because of priorities, the effect and extent of the failures tend to become more acute with the passage of time. Ultimately, if not corrected, they result in reduced performance and major breakdowns. The accelerated decay of buildings and equipment leads to a shortened useful life and often creates hazards.

As defined, deferred maintenance does NOT include unperformed preventive maintenance tasks; accruals of funds for future replacement of components at the end of their normal useful life; renovations, remodeling and additions, nor redecorating projects which are not required for building preservation. Fire Safety, energy conservation and nonmandatory code compliance projects are not included nor are those which change the use of the building or facility.

Priorities

I. Consequences of the problem

A. Presents hazards to life, health, or safety.
B. Potential for interruption of essential services.
C. Conditions causing premature deteriotation of state property.
D. Conditions that reduce the functional utility of facilities.
E. Conditions which result in excessive consumption of energy.

II. Need

1. Immediate: if not accomplished, will result in serious and irrevocable loss or damage.
2. Urgent: if not accomplished will shortly deteriorate into a Category 1 condition.
3. Imperative: if not accomplished will jeopardize the continued usefulness of the facility.
4. Essential: all other projects necessary to renew or restore the facility.

III. Frequency of Use (as a measure of essentiality to the operating program)

a. Constant: such as hospitals, prisons, police posts, etc.
b. Frequent: offices, dormitories, etc.
c. Occasional: classrooms, laboratories, shops, etc.
d. Infrequent: arenas, auditoriums, storage, etc.
e. Meager: dead storage. To be repaired only if scheduled for retention and possible reuse. (Do not include unused buildings or those which are scheduled to be vacated, abandoned or demolished.)

IV. Power Coefficient

1. Instructional or research facility.
2. Infrastructure.
3. Energy saving retrofitting.
4. Non-academic, non-infrastructure.
5. Maintenance for which cost recovery is requested.
6. Building of sufficient age or deterioration such as to render unjestifiable the cost of repa

V. APPENDIX - C.

Project Details of Each University

- Michigan State University
- Northern Michigan University
- Oakland University
- Wayne State University
- Western Michigan University

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		Number of Projects	Cost
I.	Deferred Maintenance	185	$26,175,000
II.	Code Requirements	3	93,000
III.	Energy Conservation	19	1,707,000
IV.	Capital Improvement	17	16,083,000
V.	Self Liquidation	-	-
VI.	Other	2	40,000
		226	$44,098,000

Capital Improvement included 7.54 million in Giltner Hall, which seems excessive for the age and type of building. Also 2.2 million on classroom and lecture hall renovation, and 3+ million on tunnel and electrical cables for standby capacity.

Estimates are good.

2/21/84

MICHIGAN STATE UNIVERSITY
PHYSICAL PLANT DIVISION
DEFERRED MAINTENANCE PROJECTS

Natural Resources -			
Section C, roof repairs	65,000		C-3-b-1
Cover deteriorated wood window sills	32,000		C-2-c-1
Plant Science Greenhouses -			
Replace deteriorated electric system	249,000	IV	D-4-b-1
Major deteriorated entrance steps, wingwalls, columns and landing repairs	95,000		A-2-b-1

Engineering
Bessey Hall
Anthony Hall
Library
Power Plant

Morrill Hall
Physics-Astronomy
Administration
Intramural Sports Circle
Auditorium & Fairchild

Repair 45 vandalized walk lanterns	15,000		A-2-a-2
Berkey Hall -			
Replace deteriorated ceiling tile	209,000		A-2-b-1
Library -			
Repairs to leaking curtain walls - Phase II	30,000		C-2-b-1
Correct rare book vault environment	47,000 50,000	IV	C-2-b-1
Remove asbestos insulation in mech/elec room PHASE 1 OF 3 FUNDED	~~74,000~~		A-1-b-1
Connect to Central Control System, 2.9 year payback	124,000	III	E-4-b-3
Roof, Remedial Shingle Repairs	46,000		C-2-d-1

Anthony Hall
Shaw Lane PP
Eustace Hall

Marshall
Journalism
Kedzie Hall

Chemistry -		
Replace deteriorated ceilings in research and teaching labs	60,000	B-3-b-1
Replace deteriorated floor tile and stairway treads and landings	35,000	A-1-b-1
Curb pipes in laboratories to contain liquids	15,000	C-2-b-1
Replace deteriorated portions of the roof PARTIALLY FUNDED	55,000 ~~103,000~~	B-2-b-1
Exterior masonry resotration and caulking	26,000	C-2-b-1
Botany Greenhouses -		
Exterior glazing & deteriorated rib structure	15,000	B-2-b-1
Replace leaking deteriorated serpentine steam pipe with fin tube	10,000	D-3-b-1
Replace obsolete and deteriorated electrical systems	28,000	D-4-b-1
Hort Greenhouses -		
Exterior glazing & deteriorated rib structure	75,000	B-2-a-1
Replace leaking deteriorated serpentine steam pipe with fin tube	20,000	D-3-b-1
Replace obsolete and deteriorated electrical systems	75,000	D-4-b-1

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Campus -			
Classroom renovation (125)	1,500,000	IV	D-4-b-1
Lecture Hall - Renovation (9)	648,000	V	D-3-c-1
Fee Hall - Exterior masonry repairs	130,000		C-2-b-1
Administration Bldg. -			
Exterior masonry repairs	45,000		C-2-b-1
Connect to Central Control System, 3.4 year payback	96,000	III	E-4-b-3
Intramural Sports Circle -			
~~Replace worn out wood gym floor~~	~~90,000~~		~~A-1-b-1~~
Replace worn out shower valves	20,000		D-4-b-1
Replace deteriorated pool filter	76,000		B-3-b-1
Replace deteriorated window sash, frames and hardward	30,000		C-2-b-1
Demonstration Hall -			
Replace deteriorated obsolete electrical system	564,000		D-4-c-1
Renovate heating system	86,000		B-2-b-1
Structural renovations	429,000		C-2-b-1
Agriculture Hall -			
Replace obsolete & deteriorated electrical service and transformers	383,000		D-4-b-1
Replace all worn out door locks	30,000		C-3-b-1
Replace deteriorated wire and obsolete light fixtures in stairwells, halls and restrooms	20,000		D-4-b-
~~Architectural restroom renovations~~	~~14,000~~		~~D-3-b-1~~
~~Replace deteriorated plumbing fixtures and pipes~~	~~26,000~~		~~D-3-b-1~~
Replace deteriorated floor tile in halls	18,000		A-2-b-1
Giltner Hall -			
Replace obsolete & inadequate electrical system	1,100,000		B-4-b-1
Revise ventilation air supply to meet present-day standards for research facilities	4,500,000	IV	D-4-b-1
Replace deteriorated heating and plumbing systems	400,000		B-2-b-1
Renovation of laboratory and support spaces	2,760,000	IV	C-3-b-1
Renovation of animal rooms	630,000	III	C-3-b-1
~~Replace deteriorated portion of the roof~~ Roof - ([illegible])	~~450,000~~		~~B-2-b-1~~
Replace deteriorated elevators	500,000		B-3-b-1
Connect to Central control System	220,000	III	E-4-b-3
Computer Center -			
Replace overloaded electrical distribution panels	198,000		D-3-b-1
Replace obsolete worn heating controls	51,000		B-2-b-1
Repair deteriorated ceiling tile	50,000		B-2-b-1
Replace damaged floor tile	50,000		A-2-b-1
Connect to Central Control System	66,000	III	E-4-b-3
Olds Hall -			
Replace obsolete switchgear & transformers	560,000		B-4-b-1
~~Final phase of replacing malfunctioning heating system~~	~~35,000~~		~~B-1-b~~

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Morrill Hall -		
Replace deteriorated cast iron radiators	70,000	D-3-b-1
Replace all worn out door hardware	20,000	C-3-b-1
Rebuild unsafe pipe chase in basement	15,000	A-1-b-1
Replace deteriorated entrance doors	28,000	C-3-b-1
Replace obsolete and inadequate electrical system	638,000	B-4-b-1
Exterior masonry repair	40,000	C-2-b-1
Horticulture -		
Replace deteriorated entrance doors	25,000	C-3-b-1
Replace obsolete light fixtures, deteriorated wiring, in room throughout building	87,000	D-4-b-1
Replace deteriorated sections of wood floor	40,000	C-3-b-1
Replace deteriorated combustible ceiling tile	50,000	B-2-b-1
Chittenden Hall -		
Replace obsolete & deteriorated electrical system	230,000	D-4-b-1
Replace one pipe steam sytem and rediators	40,000	D-3-b-1
Replace deteriorated #14 campus water well & extend new transmission main to new site	180,000	B-3-a-2
Wills House-		
Replace obsolete & deteriorated electrical system	25,000	D-4-b-1
Install electric building steam valve and pneumatic controls	27,000	E-4-b-1
Interior repair	25,000	C-3-b-1
Cook Hall -		
Replace obsolete & deteriorated electrical system	59,000	D-4-b-1
Replace one pipe steam system and radiators	30,000	D-3-b-1
Old Botany Building -		
Replace transformers and switches	53,000	D-3-b-1
Replace obsolete & deteriorated electric system	90,000	D-4-b-1
Linton Hall -		
Replace obsolete and deteriorated electrical system	166,000	D-4-b-1
Rebuild section of wall	50,000	C-3-b-1
Exterior masonry repairs	30,000	C-2-b-1
Soil Science -		
Replace obsolete light fixtures in rooms throughout the building	58,000	D-4-b-1
Replace cast iron radiators	80,000	D-3-b-1
Marshall Hall -		
Replace obsolete & deteriorated electrical system	97,000	D-4-b-1
Eustace Hall -		
Replace obsolete & deteriorated electrcial system	39,000	D-4-b-1
Jenison Fieldhouse -		
Replace obsolete corridor & stairwell incandescent light fixtures	43,000	D-4-b-1
Replace worn out north wood gym floor	60,000	A-1-b-1
Exterior masonry repairs	53,000	C-2-b-1
Restoration to glass block areas	60,000	C-2-b-1

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Intramural Sports West -			
Reroof leaking observation deck	55,000		C-2-b-1
~~Revise outdoor pool skimmer piping~~	~~49,000~~		~~B-3-b-1~~
Replace outdoor pool area deteriorated reinforced concrete roof on tunnel	30,000		C-2-b-1
Replace damaged and heaved concrete at outdoor pool area patio	22,000		C-2-b-1
Necessary brick wall repairs in pool area	45,000		C-2-b-1
Replace electrical system componenent in pool area	12,000		C-2-b-1
Replace deteriorated exterior doors and frames	40,000		C-3-b-1
Replace deteriorated interior doors and frames	10,000		C-3-b-1
Replace and recoat interior deteriorated walls	500,000		C-4-b-1
Replace incandescent lighting in four gymnasiums with high pressure sodium and metal halide fixtures 1.8 year payback Gym 10 $20,000 Gym 146 $25,000 Gym 230 $20,000 Gym 233 $20,000	85,000	III	E-4-b-3
Reduce energy use and substantially improve comfort levels in the N.E. arena and indoor pool area by revising duct work and fans to eliminate air stratification, which has been a constant source of complaints. 3.5 year payback	60,000	II	E-4-b-3
Veterinary Clinical Ctr. -			
Replace deteriorated motor control ctr.	15,000		B-3-a-1
Replace rusted animal room doors & various entrance doors	20,000		B-2-a-1
Replace rusted ceilings, various area	70,000		C-3-b-1
Auditorium -			
Replace deteriorated obsolete corridor and stairwell lights	23,000		D-4-b-1
Replace deteriorated plumbing	16,000		D-4-b-1
Music Building -			
Replace obsolete corridor and stairwell incandescent light fixtures	12,000		D-4-b-1
Music Practice Building -			
Replace inoperative batteries with emergency generator for emergency lights	53,000		B-1-b-1
Physics-Astronomy -			
Replace obsolete corridor incandescent light fixtures and deteriorated electrical wiring	23,000		D-4-b-1
Replace undersized electrical distribution and circuit panels	150,000	I	D-3-b-1
Install a process cooling tower to cool heat emitting research devices	277,000	I	D-3-b-1
Upgrade deteriorated elevator	80,000		A-2-b-1
Replace combustible ceiling tile in corridors	130,000		A-2-b-1
Connect to Central Control System	70,000	I	E-4-b-3

MSU

Natural Science -			
Replace obsolete, worn out heating controls	141,000		D-4-b-1
Replace deteriorated floor tile	160,000		A-2-b-1
~~Replace elevator with a self-leveling unit~~	~~100,000~~		~~A-2-b-1~~
Replace obsolete and deteriorated lighting fixtures	75,000		C-3-b-1
Replace deteriorated entry door frames and roofing	100,000		C-3-b-1
Replace deteriorated combustible ceiling tile	200,000		C-3-b-1
Replace obsolete and inadequate electrical system	607,000		D-4-b-1
Connect to Central Control System	98,000	III	E-4-b-3
Eppley Center -			
Replace deteriorated, worn out absorption machine with regional chilled water	160,000		B-2-b-1
Replace deteriorated floor tile & stair treads in Auditorium	66,000		A-1-b-1
International Center -			
Convert terminal reheat to variable air volume	65,000	III	E-4-b-3
Bessey Hall -			
Replace deteriorated absorbers and cooling tower	520,000		B-3-b-1
Convert terminal reheat to variable air volume	90,000	III	E-4-b-1
Replace deteriorated floor tile in halls	44,000		A-2-b-1
Student Services -			
Replace worn malfunctioning heating controls	80,000		D-3-b-1
Replace deteriorated floor tile in halls	51,000		A-2-b-1
Replace entrance roof & wet spots on the main roof, repair facia metal	23,000		C-2-b-1
Baker Hall -			
Roof repair, cooling tower area	5,000		C-2-b-1
Recaulk curtain walls & needle glaze windows, replace wet roofing	10,000		C-2-b-1
Remedial Blister Repairs on Roofs -	16,000		C-2-b-1

Pesticide Research
Audiology and Speech
Packaging
Munn Ice Arena
Music Practice
Food Science

Roof Coatings -	36,000		C-2-b-1

Auditorium
Museum
Physics-Astronomy
Morrill Hall
Kresge Art Center
Wells Hall
Erickson Hall
Human Ecology
IM Sports Circle
Music Building
Student Services

Flashing Repairs -	12,000		C-2-b-1

IM Sports Circle
Munn Ice Arena
Museum
Morrill Hall
Music Building
Library

wells Hall -			
Exterior masonry repairs	60,000		C-2-b-1

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Life Science -			
Deteriorated terrazzo floor repairs	40,000		A-2-b-1
Replace floor plates over chases	35,000		A-2-b-1
~~Replace deteriorated north entry way~~	~~10,000~~		~~C-3-b-1~~
~~Waterproof floors~~	~~10,000~~		~~C-2-b-1~~
Install heat recovery coils in fan system S-3, 4.0 yrs. payback	70,000	III	E-4-b-3
Install heat recovery coils in fan systems S-1 and S-2, 4.0 yr. payback	175,000	III	E-4-b-3
Engineering -			
~~Replace deteriorated entrance doors and frames~~	~~22,000~~		~~B-3-b-1~~
Anthony Hall -			
Repair cold rooms	55,000		B-2-a-1
Replace deteriorated process cooling tower	73,000		D-3-b-1
Replace damaged floor tile	25,000		A-2-b-1
Rebuild three elevators	325,000		B-3-b-1
Exterior masonry repairs	15,000		C-2-b-1
Connect to Central Control System	129,000	III	E-4-b-3
Chemistry, Physics-Astronomy, Pesticide -			
Deteriorated terrazzo floor repairs	12,000		A-2-b-1
Reservoir -			
Increase pumping capacity to meed recommended fire flow demand	209,000	I	B-3-a-2
Replace overloaded electric substation and connect to 13.2 KV primary cables	650,000	IV	B-2-a-2
Ag. Engineering -			
Replace deteriorated roof on shop section	125,000		B-2-b-1
Repair and tuckpoint masonry	15,000		C-2-b-1
Replace damaged floor tile	25,000		A-2-b-1
Replace combustible ceiling tile	45,000		A-2-b-1
Replace deteriorated fire doors and frames	20,000		C-3-b-1
Connect to Central Control System	64,000	II	E-4-b-3
Judging Pavilion -			
~~Repair and cap roof~~	~~15,000~~		~~C-2-b-1~~
Replace north and south entrance ways	30,000		B-2-b-1
Interior Painting			
Horticulture	70,000		D-4-b-1
Fire Station	10,000		D-4-b-2
Eustace Hall	5,000		D-4-b-1
Giltner Hall	155,000		D-4-b-1
Morrill Hall	104,000		D-4-b-1
Cook Hall	30,000		D-4-b-1
Agriculture Hall	143,000		D-4-b-1
Linton Hall	41,000		D-4-b-1
Berkey Hall	142,000		D-4-b-1
Pesticide Research	78,000		D-4-b-1
Marshall Hall	43,000		D-4-b-1
Biology Research	9,000		D-4-b-1
Engineering	155,000		D-4-b-1
Chittenden Hall	32,000		D-4-b-1

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Exterior Painting - Main Campus Park			
Music Building	8,000		C-2-b-1
Intramural Sports Circle	15,000		C-2-b-1
Kresge Art Center -			
Replace deteriorated exterior doors and frames	60,000		C-3-b-1
Hydraulic water proofing in basement	14,000		C-3-a-1
Electrical Distribution System -			
Increase electrical reliability to four campus wells	210,000	II	B-3-a-2
Replace 50 obsolete and hazardous electrical subway switches	620,000		A-2-a-2
Remedial Exterior Caulking -	20,000		C-2-b-1

Morrill Hall
Olds Hall
Agriculture Hall
Baker Hall

Library
Intramural Sports Circle
Conrad Hall

Poultry Science -			
Replace exterior doors and frames	30,000		C-3-b-1
Museum - Exterior masonry repairs	18,000		C-1-b-1
Various Buildings (8) -			
Install backdraft dampers on certain fan discharge ducts for one fan operations	50,000	II	E-4-b-3
Electrical Distribution System -			
Extend circuit H-36 from Comm. Arts Building to circuit H-13 at Shaw Lane to eliminate overloading on circuit H-13 in the event of the loss of circuit H-23	73,000		B-3-a-2
Kobs Field -			
Replace deteriorated electrical pole line with an underground system	34,000	II	C-3-d-1
Home Management Building -			
Replace transformers and switches	42,000		D-2-b-1
Human Ecology -			
Replace obsolete & inadequate electrical systems	662,000		B-4-b-1
Central Services -			
Replace deteriorated elevator controls & doors	100,000		B-3-b-2
Steam Distribution System -			
Improve security of steam tunnels with new lock guards & hinges	10,000	II	A-4-a-2
Replace deteriorated steam mains supplying northwest campus facilities with new tunnel	2,261,000	II	B-3-a-2
Replace the unuseable and undersized secondary steam line to north campus	2,000,000		B-2-c-2

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Steam Distribution System con't			
Replace deteriorated steam mains supplying Erickson Hall and International Center with new tunnel	506,000		B-3-a-2
1400' 20" Steam Main parallel to Red Cedar Road from Wilson Rd. to Shaw Lane Power Plant	745 000 ~~168,000~~	IV	B-3-a-2
Replace deteriorated steam mains supplying Baker Hall, Psychology Research, Kresge and Chapel with new tunnel	588,000		B-3-a-2
Replace deteriorated steam mains supplying Epply Center, Owen Hall and VanHoosen Hall with new tunnel	814,000		B-3-a-2
Replace deteriorated steam mains supplying Anthony Hall, Meats Lab and Judging Pavilion with new tunnel	1,000,000		B-3-a-2
Replace deteriorated steam mains supplying Agricultural Engineering with new tunnel	536,000		B-3-a-2
Modify north campus steam distribution system to abandon deteriorated direct buried lower pressure mains	968,000		B-3-a-2
Replace deteriorated steam mains along Shaw Lane and Chestnut Rd. from Shaw Lane Power Plant to Munn Ice Arena	1,745,000		B-3-a-2
Various steam tunnel areas - Waterproof expansion and structural cracks	12,000		C-1-a-2
Electrical Distribution System -			
Replace deteriorated and hazardous manhole covers	49,000		A-4-a-2
Sewage Collection System -			
Repair 600' of 30" Sanitay sewer along Red Cedar Rd. south of Wilson Rd.	90,000		B-3-a-2
Erickson Hall -			
Replace deteriorated floor tile	10,000		C-3-b-1
Judging Pavilion -			
Reglaze and paint exterior windows, and masonry repairs	30,000		C-3-b-1
Clinical Sciences -			
Replace soffit system 1,700 sq. ft.	66,000		B-2-a-1
Exterior caulking repair	48,000		C-2-b-1
Shaw Lane Power Plant -			
Deteriorated steam tunnel, vault 168 area	20,000		C-2-a-2
Bio-Chemistry -			
Repair deteriorated portions of roof	28,000		B-2-b-1
Repair and tuckpoint exterior masonry	24,000		C-2-b-1
Replace deteriorated process cooling towers	60,000		D-3-b-1
Connect to Central Control System, 2.3 year payback	72,000	III	E-4-b-3
Journalism -			
Replace deteriorated transformers and unreliable switches	53,000		B-2-b-1
Olin Health Center -			
~~Exterior masonry restoration~~	~~20,000~~		~~C-2-a-1~~

MSU

Pesticide Research -		
Connect to Central Control system 3.8 year payback	67,000 III	E-4-b-3
Electrical Distribution System -		
Replace the overloaded electrical circuits feeding Chemistry and Bio-Research to provide the necessary level of reliability	1,200,000 III	B-3-a-2
Bio-Research -		
Replace deteriorated roof and saturated roof insulation	33,000	B-2-b-1
Repair and tuckpoint exterior walls	28,000	C-2-b-1
Connect to Central Control System	79,000 III	E-4-b-3
T.B.S. Power Plant -		
Replace baghouse bags, Units 1 & 2	250,000	B-4-a-2
~~Total~~	~~$2,307,000~~	

[illegible]/18/84

MICHIGAN STATE UNIVERSITY
PHYSICAL PLANT DIVISION
ADDITIONAL DEFERRED MAINTENANCE PROJECTS
AS OF 5/18/84

Plant Biology -		
Replace deteriorated retaining wall	35,000	C-2-b-1
T. B. Simon Power Plant -		
Masonry restoration	40,000	C-2-b-2
Munn Ice Arena -		
Repair storm sewer at North Entrance and Phase I of IV concrete spillway repairs	40,000	C-2-b-1
Judging Pavilion -		
Masonry restoration, paint and reglaze windows	20,000	C-2-c-1
Agriculture Hall -		
Masonry restoration	25,000	C-2-b-1
Steam Distribution System -		
Repair steam vaults in roadways	40,000	C-2-d-2

MICHIGAN STATE UNIVERSITY

DIVISION OF CAMPUS PARK AND PLANNING
412 OLDS HALL
TELEPHONE (517) 355-9582

EAST LANSING · MICHIGAN · 48824-1047

February 17, 1984

DEFERRED SITE MAINTENANCE

The following listing is the deferred maintenance compiled by the Division of Campus Park and Planning and Grounds Maintenance Department. This is unaccomplished site work on the developed campus. It includes maintenance outside the buildings that is acute to the operation of the University in order for it to maintain its education and service mission.

	Cost Estimate		Priority
Grounds Maintenance Building			
To comply with requirements of Department's Pollution Incident Prevention Plan.			
Rehabilitate existing space to provide spray crew with personnel room, showers and miscellaneous improvements..	$ 63,000	II	A-2-b-2
Chemical rinse pit (approximately 12' x 28')............	20,000	II	A-2-b-2
Disconnect existing drains leading from equipment wash area from storm sewer and connect into sanitary sewer...	10,000	II	A-2-b-2
Fencing Along Grand Trunk Railroad Right-of-Way			
Replace dilapidated fence to reduce hazards to life created by illegal pedestrian crossings.................	118,000		A-4-b-2
Road Reconstruction			
Service Road from Farm Lane to Harrison Road............	756,000		B-2-a-2
Campus Traffic Signs			
Replace aged and damaged signs..........................	20,000		B-3-a-2
Renovation of Lodal Rubbish Bins			
Heavy use and sanitation require approximately 65 units per year to be steam cleaned, repaired and painted. Failure to perform this rehabilitation work leads to premature deterioration................................	32,500		B-3-a-2

MSU is an Affirmative Action/Equal Opportunity Institution

MSU

Road Resurfacing

Wilson Road from Bogue Street to Conrad Hall............	$ 48,000	B-3-a-2
Shaw Lane from Bogue Street to Hagadorn Road............	88,000	B-3-a-2
Stadium Road from Harrison Road to Public Safety........	58,400	B-3-a-2
Red Cedar Road from Chestnut to Wells Hall..............	40,000	B-3-a-2
Birch Road from Shaw Lane to Stadium Road...............	48,000	B-3-a-2

Storm Drainage Rehabilitation

Rebuild storm drainage lines that are deteriorated or undersized relative to current run-off requirements.....	200,000	C-3-a-2

General Walk Repairs

Repair existing deteriorated sidewalk along Michigan Avenue and Grand River Avenue from Beal Street Entrance to Bogue Street..	46,200	C-3-a-2
Replace Life Science exposed aggregate Entrance Walk....	39,400	C-1-b-2

River Bank Stabilization

Periodic devastating floods of the Red Cedar have eroded its banks, washed soil away from drainage culvert headwalls, undermined riverside plantings and undercut existing retaining walls. Remedial work is essential if further damage is to be prevented..........	55,000	C-3-b-2

Lightning Protection for Irreplacable Heirloom Trees

Some thirty heritage specimen trees located mostly in the north campus oval require protection by the installation of proper arrestors and ground cables......	19,000	VI	C-3-c-1

Deferred Street Tree Maintenance

Due to reduction in labor and funding, repair and replacement of campus street trees (American Elm) is being annually deferred..............................	39,500	C-3-d-2

Bear Lake Natural Area

Replace deteriorated fences to restrict unauthorized access by ORV's that is causing accelerated erosion and thereby endangering the integrity of the clay seal which retains the waters of the Bear Lake Basin.........	74,000	C-3-d-2

MSU

Rejuvenation of Old Campus Plantings		
Replace overgrown plantings around 24 older buildings. These plantings have important instructional value for landscape architecture, horticuluture, botany, forestry, etc.	$ 50,400	C-3-d-2
General Planting Restoration		
Remove overgrown plantings near intersecting walks, roads and service drives which block essential site lines for safe movement of vehicles, pedestrians and bicycles. Restore these areas with new planting varieties that will not hinder visibility	17,000	C-3-d-2
Sanford Natural Area		
Replace dilapidated fence to restrict the development of unauthorized pedestrian pathways through this parcel of original campus land acquired in 1855	16,000	C-4-b-2
Beal Garden		
Replace irrigation system	12,000	C-4-c-1
Wells - International Center - Erickson		
Replace irrigation system	36,000	C-4-c-2
Natural Resources Building		
Remove and replace deteriorated wood benches attached to concrete planters and repair asphalt joints in concrete paving to eliminate safety hazards (trippers)	8,000	C-4-d-2
Beaumont Grounds Maintenance Nursery		
Due to labor deductions, maintenance of the nursery is being annually deferred. This nursery is the source for nearly all the campus woody plants. Continued lack of care will lead to the decline and deterioration of the campus arboretum-park with its varied teaching, research, public service and landscape missions	21,000	V/T C-4-e-2
Total	$1,935,400	

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NORTHERN MICHIGAN UNIVERSITY

		Number of Projects	Cost
I.	Deferred Maintenance	53	$ 2,309,000
II.	Code Requirements	1	300,000
III.	Energy Conservation	4	79,000
IV.	Capital Improvement	4	2,638,000
V.	Self Liquidation	0	0
VI.	Other	5	11,786,000
			$17,112,000

Capital Improvement included: replacement of storage barn, replacement of shop equipment in skills center and electrical loop.

Other includes: 11.3 million for tunnel to replace buried steam and return lines.

In general, estimates seem low.

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NORTHERN MICHIGAN UNIVERSITY

Deferred Maintenance Projects

January 16, 1984

LUTHER S. WEST SCIENCE BUILDING:			
Replace plumbing fixtures and gas spigots in laboratories		$ 20,000	D-3-b -1
Recaulk all windows, doors, control joints, and reinsulate above windows		15,000	C,E-2-c
Door hardware replacement		8,500	C,D-3-c
Inspection and overhaul absorption A/C equipment		7,500	C-2-b -2
Replace greenhouse plexiglass		12,000	C-3-c -1
Overhaul moveable chalkboards throughout the facility due to age and wear		7,000	D-3-b -
Clean and seal exterior masonry		30,000	C-2-a -
SAM M. COHODAS ADMINISTRATIVE CENTER:			
Seal exterior masonry		40,000	C-2-a -
~~Repair and recoat roof~~		~~[illegible]~~	C-2-a -
Regrade and repave on perimeter of building --water leakage to basement		25.000	C-2-a -
Replace damaged conduit and 12480V primary cable		15,000	B-3-a -
Window corrections		150,000	C-3-b -
Balance perimeter radiation	III	10,000	E-4-a -
Repair and provide vapor barrier on walls under windows		8,000	C-2-a-2
EDGAR L. HARDEN LEARNING RESOURCES BUILDING:			
Repair and recoat roof		45,000	C-2-a-1
Insulate and install vapor barrier in soffits		28,000	C-2- -1
Repair and seal exterior masonry		35,000	C-2-a-1
Inspection and overhaul of obsorption A/C equipment		10,000	C-2-a -2

NORTHERN 315

EDGAR L. HARDEN LEARNING RESOURCES BUILDING (Continued)

Replace plate glass window with thermo units	III	36,000	C,E-2-

JOHN X. JAMRICH HALL:

Repair and seal exterior masonry	20,000	C-2-a -1
Repair and/or replace all exterior doors and door hardware	15,000	C-3-a -1
Renovate air handling equipment	40,000	D-4-a -2

FOREST A. ROBERTS THEATRE,
RUSSELL THOMAS FINE ARTS, AND
WAYNE B. McCLINTOCK INDUSTRIAL ARTS BUILDING:

~~Repair/replace exterior doors, door frames and hardware (Fire Code Compliance)~~		~~12,000~~	A,C-3-a
Replace obsolete, worn hardware on all interior doors		90,000	C-3-a -1
Excavate, seal, and repave, to correct water drainage and penetration at service drives and entrances		15,000	C-2-a -1
Replace door weatherstrip and recaulk windows		8,000	C-2-b -3
Reconstruct fire doors and skylights over stage	III	8,000	E,C-3-c
Replace light diffusers		8,000	D-3-a -1
Refinish granite surface on all Bradley circular wash fountains		5,000	C-2-b -1
Renovate H & V Controls		50,000	D-3-a -3
Repair seal exterior masonry		90,000	C-2-a -1
Replace or repair domestic water heater		30,000	D-4-a -2
Replace condensate receivers		12,000	D-3-a -2

CHARLES B. HEDGCOCK PHYSICAL EDUCATION BUILDING AND FIELDHOUSE

Repair, sand, refinish gymnasium floor	15,000	D-3-b
Strip, sand, resurface Fieldhouse floor	60,000	D-3-a -1

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NORTHERN

CHARLES B. HEDGCOCK PHYSICAL EDUCATION BUILDING AND FIELDHOUSE (Continued)

Replace worn, missing floor covering throughout building		100,000	D-3-a-6
Renovate deteriorated shower rooms, locker rooms, restrooms		120,000	C-3-a-6
Renovate inadequate heating, ventilation and related control systems		80,000	C,D-3-a-
Replace worn, obsolete doors and door hardware		35,000	D-3-a-6
~~Roof replacement~~		~~85,000~~	C-2-a-1
Replace condensate pumps		12,000	D-3-a-2
Renovate swimming pool filter system	VI	150,000	C-3-c-6
Epoxy injection of swim tank and deck		35,000	D-3-b-6
Complete replacement of swimming pool tile and hardware		75,000	C,D-2-b-

BIRDSEYE BUILDING:

~~Roof replacement~~		~~170,000~~	C-1-b
Electrical wiring renovation		40,000	B-4-a-1
Rebuild exterior walls and replace windows	IV	300,000	C-1-b-3
Repipe steam PRU station		8,000	B-4-a-2

PHYSICAL EDUCATION INSTRUCTIONAL FACILITY:

Repair and seal exterior masonry	40,000	C-2-a-1
Repair and refinish wood floors in weight room and gymnasium	30,000	D-3-a-1
Renovate racquet ball courts	80,000	D-3-a-1
Repair interior masonry cracks due to settling	30,000	D-3-a-1
Replace corroded conduit, wiring, and fixtures in basement pool viewing area	12,000	B-2-a-1
Repair and insulate exterior wall of natatorium	25,000	C-2-a-1

NORTHERN

MEMORIAL FIELD:			
Repair/replace bleacher and stadium seating		100,000	A,C-3-d-4
Repair/replace fencing		45,000	D-4-d-4
Replace hot water boiler and heater	III	25,000	D,E-4-D-4
Epoxy inject concrete stadium		50,000	C-2-d -4
Renovate and update locker room, training room, equipment room, offices and restrooms	VII	150,000	C-3-c-4
GREEN BARN:			
Remove and rebuild	IV	500,000	C-1-c-6
RIPLEY HEATING PLANT:			
Repair and seal exterior masonry		20,000	C-2-a-2
D.J. JACOBETTI VOCATIONAL SKILLS CENTER:			
Obsolete, unsafe equipment replacement	IV	1,250,000	A-2-c
CAMPUS:			
Replacement and extension of primary electrical loop	IV	588,500	A,D-3-a-2
Total replacement of obsolete outdoor constant current series lighting system		300,000	A,D-3-a-2
Sidewalk replacement		100,000	A,D-4-a-2
Parking Lot Surfacing		6,000	C,D-2-a-2
Roadway repair and replacement		60,000	D-5-a-2
Parking lot resurfacing		22,000	C,D-2-a-2
Steam and condensate distribution system repair, replacement and looping	VII	11,376,000	B-2-a-2
Repair and replacement of steam traps--all buildings		80,000	E-4-a-2
OSHA Compliance	II	300,000	A-3-c -2
Grand Total for All Buildings and Campus		~~$17,407,500~~	

OAKLAND UNIVERSITY

		Number of Projects	Cost
I.	Deferred Maintenance	23	$ 1,622,000
II.	Code Requirements	0	0
III.	Energy Conservation	2	110,000
IV.	Capital Improvement	0	0
V.	Self Liquidation	1	20,000
VI.	Other	1	200,000
		27	$ 1,952,000

Estimates seem low.

In general, the campus facilities are well maintained. Estimates seem low. Other includes: $200,000 for repair to Dodge Farm house which should have further study and justification.

6/13/84 OAKLAND

ELECTRICAL PROJECTS:

			Power Coefficient
A-3-b	Replace deteriorated walkway lights	$ 25,000	(2)
A-3-b	Replace primary electrical service - East Campus -	75,000	(2)
B-3-b	Replace secondary electrical service on East Campus at Hillendale -	10,000	(2)
B-3-c	Replacement of cathodic protection on high temperature hot water mains -	10,000	(2)
D-3-a	Clean and test primary switchgear	25,000	(2)
	TOTAL ELECTRICAL PROJECTS	$145,000	

Category 1	(0)
Category 2	(5)
Category 3	(0)
Category 4	(0)

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6/13/84 OAKLAND

MECHANICAL PROJECTS

				Power Coefficient
A-3-a	Insulate heating mains in mechanical rooms and manholes in various locations.	28,000		(3)
B-3-a	Replace high temperature hot water lines, buried Gilsulate, area of Hill House -	$215,000		(2)
B-3-a	Replace H.T.H.W. heating mains to Hollie Lepley Building, Wilson and Dodge Halls, and Kresge Library -	150,000		(1)
B-3-a	Install drains from HTHW manholes Dodge Hall, Kresge Library and Wilson Hall to eliminate sump pumps.	15,000		(1)
B-3-b	Repair deteriorated steam piping and controls - Meadow Brook Hall -	20,000	V	(2)
B-3-b	Replacement of controls for environmental control in Public Safety Building	10,000		(2)
B-3-d	Replacement of heating coils in Oakland Center and South Foundation Hall-	50,000		(1)
D-3-b	Replace heating system at the Greenhouse -	20,000		(2)
D-3-b	Replace and repair all required thermostats, controls and valves campus-wide	60,000		(3)
D-3-c	HVAC - Pryale Hall	30,000		(1)

TOTAL MECHANICAL PROJECTS $598,000

Category 1	(4)
Category 2	(4)
Category 3	(2)
Category 4	(0)

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OAKLAND

6/13/84

ARCHITECTURAL PROJECTS

				Power Coefficient
A-1-b	Repair below grade water leaks at Wilson Hall, H. Lepley Sports Building, and Varner Hall -	$70,000		(1)
A-1-c	Repair and replace doorways - Varner and Hannah Halls -	40,000		(1)
A-2-a	Repair and replace paved walkways, curbs and gutters and provide access -	50,000		(2)
C-1-b	South Foundation Hall, tuckpoint and caulk -	25,000		(1)
C-1-b	Stabilize shoulders on campus roads	26,000		(2)
C-2-b	North Foundation Hall, tuckpoint and caulk -	14,000		(1)
C-2-c	Varner Hall, roof repairs and tuckpointing -	20,000		(1)
C-3-a	Resurface roads and parking lots Approx. 550,000 Square Feet	355,000		(2)
C-3-b	Replace roofs - North and South Foundation Halls - 63,345 Square Feet	299,000		(1)
C-4-b	Repair Dodge Farmhouse in order for it to become a suitable structure for safe and viable occupancy.	200,000	VI	(2)
D-4-b	Replace windows - North and South Foundation Halls and Wilson Hall -	75,000	III	(3)
D-4-c	Replace glass and reglaze Greenhouse	35,000	III	(3)
	TOTAL ARCHITECTURAL PROJECTS	$1,209,000		

Category 1	(6)
Category 2	(4)
Category 3	(2)
Category 4	(0)

CHM:mm

WAYNE STATE UNIVERSITY

		Number of Projects	Cost
I.	Deferred Maintenance	112	$15,289,000
II.	Code Requirements	5	655,000
III.	Energy Conservation	1	80,000
IV.	Capital Improvement	6	1,310,000
V.	Self Liquidation	0	0
VI.	Other	13	9,200,000
		137	$26,534,000

Other includes: 6+ million in Mackensie Hall to convert an old hotel to administrative offices; 1 million for garage restoration at 6001 Cass; and 1.96 million for replacement of cooling and lighting fixtures and heat and vent systems in library, which possibly can be repaired rather than replaced.

Cost estimate generally low - No site work included and several walks need repair or replacement.

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WAYNE STATE UNIVERSITY

Facilities Planning & Management Department

Deferred Maintenance Projects

January 17, 1984

AMINT CODE

	No.	Building Name	Cost	Priorities Conseq.	Need	Freq.
/	001	**Old Main** 331,426 ¢' CLASSROOMS/GENERAL				
1894		(1) Replace tile floors	$ 55,000	A	3	b
(ORIGINAL BLDG.)		(1) Replace 4 air handlers (including filtration & temp. control)	150,000	D	4	b
1907, 1934,		(1) Roof replacement	50,000	C	2	b
1941, 1947		(1) Lighting	75,000	D	3	b
'MAJOR ADD		(1) Exterior Restoration	50,000	C	3	b
913-BURNHAM ... DEMO. 1973)	003	**Physics** 121,659 ¢' RESEARCH/OFFICE/CLASSROOM PHYSICS				
1963		(1) Replacement of coils and dampers	35,000	B	3	b
✓	005	**Science Hall** 127,943 ¢' RESEARCH/CLASSROOM/OFFICE BIOLOGICAL SCI.				
1947		(1) Exterior building restoration	50,000	C	3	b
		(1) Greenhouse	20,000	C	3	c
		(1) Lighting (Lecture Hall)	50,000	D	3	c
		(1) General Lighting	200,000	D	3	c
✓	006	**Life Science** 56,730 ¢' RESEARCH/CLASSROOM/OFFICE BIOLOGY				
1959		(1) Replace cooling tower	46,000	B	3	b
		(1) Exterior restoration	24,000	C	3	b
		(1) Chiller replacement	240,000 ~~180,000~~	B	3	b
		(1) HVAC renovation	15,000	B	3	b
	007	**Chemistry** 213,571 ¢' RESEARCH/CLASSROOM/OFFICE CHEMISTRY				
19[illegible]		(1) Exterior restoration (bridge)	10,000	C	3	c
		(1) Cooling tower repair	60,000	B	3	b
		(1) Replace distilled water system	25,000	B	3	b
✓	016	**State Hall** 156,317 ¢' CLASSROOM/OFFICE. ENGLISH				
1948		(1) Fire Code compliance	100,000 II	A	4	b
1955 (ADDITION)		(1) Replace fixed seating	150,000 VI	D	3	c
		(1) Chiller replacement	600,000	B	1	b
		(1) Exterior restoration	80,000	C	3	b
	022	**Prentis Building** [illegible] ¢' CLASSROOM/OFFICE BUSINESS ADMIN				
1962		(1) Replace cooling tower	+1,000 34,000	B	3	b
		(1) Exterior building restoration	130,000	C	3	b
		(1) Chiller replacement	352,000 350,000	B	3	b

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Page 2 - January 17, 1984

			Priorities		
No. MAINT CODE	Building Name	Cost	Conseq.	Need	I
023	**DeRoy Auditorium** 15,705ф'	CLASSROOM	GENERAL		
1962	(1) Exterior restoration (including plaza)	$120,000	C	3	b
	(1) Exterior door replacement	30,000	A	2	b
	(1) Seating and carpeting	100,000	D	3	b
026 & 027	**Purdy and Kresge Libraries** 137,337ф' (PURDY) 65,396ф' (KRESGE)	LIBRARY	- GENERAL		
FOR 027	(1) Replace ceiling	700,000	B	2	b
50 (1st Unit)	(1) Replace lighting systems OK	300,000 VI	A	1	b
51 (2nd Unit)	(1) Replace heating & ventilating systems	960,000	B	3	b
TOTAL 50	(1) Replace elevator (service)	50,000	B	3	b
	(1) Roof replacement	120,000	C	3	b
	(1) Exterior restoration (Kresge)	80,000	C	3	b
	(1) Install cooling tower	80,000 III	E	4	b
028	**5229 Cass** 19,311ф'	CLASSROOM / OFFICE	LABOR STUDIES		
APPROX. 1920-1926	(1) Roof replacement	60,000	C	2	b
	(1) Install heating plant Replace - RAD. & AIR OLD	50,000	D	4	b
	(1) Exterior restoration	20,000	C	3	b
036	**Reuther Library** 49,297ф'	LIBRARY			
1972	(1) Exterior restoration	50,000	C	3	c
038	**Music Building** 29,400ф'	CLASSROOM/OFFICE	MUSIC		
1952	(1) Exterior restoration	40,000	C	3	b
	(1) Roof replacement	100,000	C	3	b
	(1) Fire Code compliance OPEN STAIR	40,000 I	A	4	b
	(1) Chiller replacement	120,000	B	3	b
039	**Community Arts** 51,173ф'	CLASSLAB / OFFICE	GENERAL		
1957	(1) Chiller replacement 490 TON	400,000	B	1	b
	(1) Exterior restoration	30,000	C	3	c
040	**Art Building** 66,040ф'	CLASS LAB / CLASSROOM / OFFICE	ART		
1954	(1) Fire Code Compliance	30,000	A	4	b
	(1) Exterior restoration	80,000	C	3	c
	(1) Roof replacement	60,000	C	3	c
	(1) Replace lighting (4th floor) OLD INSUFF.	30,000	D	4	c
	(1) Replace floor tile	15,000	C	3	c
	(1) TV renovation	40,000	B	2	c
042	**Alumni House** 22,400ф'	OFFICE / RESIDENCE		GENERAL	
1937	(2) HVAC ~~Renovations~~ Replace	70,000	D	3	b
043	**McGregor Memorial** 25,311ф'	OFFICE / CONFERENCE	CENTER	GENERAL	
1958	(2) Exterior restoration REPLACEMENT	250,000	D	3	c
	(2) HVAC restoration	130,000	B	3	c

WAYNE STATE UNIVERSITY, Facilities Planning & Management - Deferred Maintenance Projects
Page 3 - January 17, 1984

No.	Building Name	Cost	Priorities Conseq.	Need	Freq.
✓ 048	**Cohn** 88,907 ⌀'	CLASSROOM/CLASS LAB/OFFICE		SOCIAL WORK	
1953	(1) Exterior restoration	$ 53,000	C	3	b
	(1) Roof replacement	85,000	C	3	b
	(1) Chiller replacement	175,000	B	2	b
	(1) Replace HVAC (including Code compliance)	2,420,000	B	2	b
	(1) Elevator renovation	40,000	B	3	b
050	**Shapero** 34,467 ⌀'	CLASSROOM/CLASS LAB/OFFICE/RESEARCH			PHARMA.
1965	(1) Exterior building restoration	85,000	C	3	c
	(1) Chiller replacement	200,000	B	3	b
052	**5740 Cass** 19,760 ⌀' 2 story	CLASS LAB/OFFICE		ART	
	(1) Roof replacement	55,000	C	1	d
	(1) Exterior restoration	50,000	C	1	d
	(1) Windows	50,000 IV	C	1	d
053	**Law Library & Classroom** 124,935 ⌀'	CLASSROOM/CLASS LAB/OFFICE/LIBRARY			LAW
1965	(1) Exterior restoration	20,000	C	3	c
	(1) Replace cooling tower + CHILLER	175,000 ~~30,000~~	~~B~~ A	3	b
	(1) Replace floor covering (classroom) CARPET	75,000	A	2	b
	(1) Lighting	90,000	B	2	b
054	**5750 Cass** 11,022 ⌀'	STORAGE	GENERAL		
	(2) Roof replacement	60,000	C	1	d
	(2) Exterior restoration	100,000	C	1	d
055	**70 W. Palmer** 7,220 ⌀'	CLASS LAB/OFFICE		GENERAL	
	(1) HVAC - Restoration	35,000	B	3	b
	(1) Roof replacement REPAIR	10,000	C	3	b
060	**5454 Cass (Facilities Planning & Mngmt.)** 72,500 ⌀'	OFFICE/SHOPS		PHYSICAL PLANT	
	(2) Replace windows	30,000	D	3	b
	(2) Exterior restoration	50,000	C	3	b
~~065~~ 06+	**5475 Woodward** 13,300 ⌀'	OFFICE		DEVELOPMENT & LEGAL	
	(2) Exterior restoration	100,000 II	C	1	b
069	**Mackenzie Hall** 207,153 ⌀' FULL BLDG	OFFICE		ACADEMIC ADMIN	
	(2) Replace windows	950,000	C	2	b
	(2) Roof replacement	140,000	C	3	b
	(2) Exterior restoration	500,000	C	3	b
	(2) Replace air conditioning units	1,000,000 II	D	4	b
	(2) Replace heating systems	1,500,000	C	3	b
	(2) Replace domestic water systems	400,000	B	1	b
	(2) Replace elevators	1,000,000	B	3	b
	(2) Fire Code compliance	600,000	A	2	b

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WAYNE STATE UNIVERSITY, Facilities Planning & Management - Deferred Maintenance Project
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No.	Building Name	Cost	Priorities Conseq.	Need	er
074	95 W. Hancock 23,447⌀'	CLASS LAB/OFFICE		THEATRE DEPT	
	APPROX. (1)Exterior restoration	$ 20,000	C	3	c
	1951-1950 (1)Roof replacement STREET CAR BARN	25,000	C	3	c
	(1)Heating & ventilating restoration	35,000 III	E	3	c
075	71 W. Warren 34,800⌀'	OFFICE		PSYCHOLOGY	
	1931 (2)HVAC replacement [illegible] TO 2 UNITS	LOW 60,000	B	3	b
	(2)Steam system renovation	20,000	3	3	b
076	84 W. Hancock 11,577⌀'	CLASS LAB/VIVARIUM		BIOLOGY	
	1925 (1) Exterior restoration 2 STORY GARAGE	25,000	C	3	c
	(1) HVAC restoration 3 SYSTEMS	LOW 35,000	B	3	c
	(1) Roof replacement	10,000	C	3	c
077	76 W. Hancock, Public Safety	OFFICES		PUBLIC SAFETY	
	APPROX. (2)Exterior restoration 13,234⌀'	20,000	D	3	a
	1924-1950 (2)Roof replacement	10,000	D	3	a
	(2) HVAC restoration	20,000	B	3	a
078	Matthaei Field House 5,322⌀'	LOCKER ROOMS / OFFICES		PHYS ED	
	937 (1)Roof replacement	10,000	C	3	c
080	Matthaei 155,942⌀'	COURTS/GYMNASIUM/POOL/		PHYS ED	AH.
	1935 (1)Interior gym doors FOLDING DOOR	60,000	B	3	c
	(1)Exterior restoration	50,000	C	3	c
	(1)Heating & ventilating restoration	80,000	3	2	c
140	Education 100,713⌀'	CLASSROOM/CLASS LAB/OFFICE		EDUCATION	
	1955 (1)Exterior restoration	50,000	C	3	c
	(1)Repair ceilings & lighting systems	350,000	A	2	b
	(1)Replace 431-ton chiller	350,000	B	2	b
	(1)Roof replacement [illegible]	90,000	C	3	b
141	Music (Singer Building) 2[illegible]⌀'	CLASSROOM/CLASS LAB/OFFICE		MUSIC	
	1943 (1)Exterior restoration	15,000	C	3	c
	(1)Roof replacement	10,000	C	3	c
155	Manoogian 153,750⌀	CLASSROOM/CLASS LAB/OFFICE/LIBRARY		LANGUAGE	
	1967 (1)Exterior restoration HEATING	25,000 60,000 ?	C	3	b
189	Hilberry Theatre 37,000⌀	CLASSROOM/OFFICE/THEATRE		THEATRE [illegible]	
	1915 (1)Roof replacement OLD CHURCH	45,000	C	3	d
	(1)Exterior restoration	50,000	C	3	d
	(1) Replace domestic water system (SHOWERS)	25,000	C	3	d

WAYNE STATE UNIVERSITY, Facilities Planning & Management - Deferred Maintenance Projects
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No.	Building Name	Cost	Conseq.	Priorities Need	Freq
191 & 192	Administrative Services I, II & III	OFFICES		ADMINISTRATION	
919 (A.S.B. I & II)	(2) Roof replacement 144,739ø (A.S.B. I & II)	340,000	C	1	b
APPROX.	Chiller replacement 18,373ø (A.S.B. III)	268,000	B	1	b
[illegible]0-1931 (A.S.B. III)	Exterior restoration 3 BLDGS	250,000	C	3	b
193	Computing Center 32,753ø'	OFFICES		ADMINISTRATION	
APPROX	(3) Renovate HVAC systems	200,000	B	2	a
1951-1960	(2) Exterior restoration	40,000	C	4	b
194	5959 Cass (Pontiac Building) 54,[illegible]ø'	STORAGE/ MOTOR POOL		ADMINISTRATION	
1931-	(2) Exterior building restoration	150,000	A	1	d
	(1) Replace roof	60,000	C	3	d
195	5743 Woodward 35,563ø'	CLASS LAB/ OFFICE		STUDENT [illegible]	
APPROX	(1) Replace heating system OLD STORE	40,000	B	3	b
1900-19[illegible]	(1) Replace roof	45,000	C	1	b
	(1) Exterior renovation	25,000	C	3	b
196	6001 Cass GARAGE 263,[illegible]ø'	CLASSROOMS/ CLASS LAB/ OFFICE		CRIMINAL JUST.	
1919	(1) Fire Pump replacement	50,000	A	1	b
[illegible] (Garage)	(1) Exterior building restoration	500,000	C	3	b
	(1) Replace roof	145,000	C	3	b
	(1) Renovate HVAC	500,000	B	2	b
	(1) Concrete restoration (garage)	1,000,000 VI	C	3	b
197	6012 Cass 5,[illegible]ø'	OFFICE/STORAGE		ADMINISTRATION	
APPROX	(2) Replace windows	20,000	C	4	d
19[illegible]	(2) Replace roof	10,000	C	4	d
	(2) Exterior restoration	10,000	C	4	d
198	6030 Cass (Storage) [illegible]	OFFICE/STORAGE		BUSINESS SERVICE	
[illegible]	(2) Exterior renovation	100,000	C	4	d
	(2) Replace roof	20,000	C	4	d
503	77 W. Canfield [illegible]	OFFICE/TV STUDIO		GENERAL	
[illegible]	(2) Replace HVAC units	20,000	B	3	c
509	Knapp (Merrill-Palmer) [illegible]	OFFICE/CLASS LAB		MERRILL PALMER I	
[illegible]	(1) Chiller replacement	175,000	B	2	b
	(1) Replace HVAC system	500,000 IV	B	2	b
600	645 Mullett [illegible]	CLASSROOM/CLASS LAB/RESEARCH/OFFICE		BIOLE.	
[illegible]	(1) Exterior restoration	50,000	C	3	c
	(1) Roof	20,000	C	3	c
	(1) Domestic water	100,000	B	1	c

WAYNE STATE UNIVERSITY, Facilities Planning & Management - Deferred Maintenance Projects
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					Priorities		
No.	[illegible]	Building Name	Cost		Conseq.	Need	…ng
601		625 Mullett 19,320 □'	CLASSROOM/CLINICAL LAB/OFFICE/RESEARCH			ENVIRON HE[illegible]	
	195[illegible]	(1) Roof	$ 10,000		C	3	c
		(1) Exterior renovation	10,000		C	3	c
		(1) Replace chiller	60,000		B	2	c
605		Health Science (1400 Chrysler) 162,703 □'	CLASSROOM/CLASS LAB/OFFICE/RESEARCH			HEALTH SCI	
	1931	(1) Roof replacement	131,000		C	2	b
		(1) Exterior restoration	80,000		C	3	b
		(1) Replace domestic water system NO [illegible] 9th [illegible]	725,000		B	1	b
		(1) Replace 2 elevators	400,000	IV	B	2	b
608		Shiffman Library 65,300 □'	OFFICE/LIBRARY			MED SCHOOLS	
	195[illegible]	(1) Roof replacement	90,000		C	3	b
609		Mott Center 76,021 □'	RESEARCH/OFFICE/LIBRARY			MED SCHOOL	
	1971	(1) Roof replacement	90,000		C	2	b
		(1) Exterior restoration	10,000		C	2	b
610		Mortuary Science 27,[illegible]	CLASSROOM/CLASS LAB			MORTUARY SCI	
	[illegible] 1931-193[illegible]	(1) Replace roof	50,000		C	2	c
611		Medical Research 111,[illegible]	RESEARCH/OFFICE			MED SCHOOL	
	19[illegible]	(1) Replace cooling tower	80,000	I	B	2	
		(1) Exterior restoration (Code compliance)	165,000		A	2	a
		(1) Replace chiller	500,000		B	2	a
612		Scott Hall 46[illegible],259 □'	CLASSROOM/CLASS LAB/RESEARCH/OFFICE			MED SCHOOL	
	19[illegible]	(1) Replace roof (9th & 4th floors)	170,000		C	2	a
		(1) Repair cooling tower	55,000		B	2	a
		(1) Exterior restoration	100,000		C	3	a
		(1) Fire Code requirements	100,000	I	A	2	a
620		Bonstelle Theatre 31,537 □'	CLASS LAB/OFFICE/THEATRE			THEATRE DEPT	
	[illegible] [illegible]-19[illegible]	(1) Exterior restoration (Code compliance)	250,000	I	C	1	d
		(1) Replace HVAC system	250,000		B	2	d
622		Southfield Center N/A	CLASSROOM/OFFICE			LIFE LONG LEARN	
	[illegible]	(1) Tie into City water & sewer	85,000	I	D	4	c
		(1) Replace heating systems	60,000		B	1	c

$ 36,000,000

WESTERN MICHIGAN UNIVERSITY

		Number of Projects	Cost
I.	Deferred Maintenance	61	$ 3,666,000
II.	Code Requirements	32	2,613,000
III.	Energy Conservation	7	888,000
IV.	Capital Improvement	2	210,000
V.	Self Liquidation	49	8,025,000
VI.	Other	22	9,747,000
		173	$25,149,000

Code Requirements include: 4 elevators plus other work for handicapped access.

Other includes: 2.3+ million in major expenditures in three (3) buildings on the East Campus; and 7 million in new Steam & Electric service to the area - this expenditure seems excessive for relative value and use of 70 to 80 year old buildings.

In general estimates were reasonable.

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WESTERN MICHIGAN UNIVERSITY

Deferred Maintenance Projects

January 1984

					PRIORITIES		
BLDG. NO.	NAME	COST	H.E. CATEGORY		CONSEQ.	NEED	FREQ.
1	East Hall - classrooms, offices-Accountancy, Management, Physical Education						
	Coat Roof	$ 31,000	1	VI	C	2	c
	Demolish North & South Sections	180,000	6		D	2	c
	Install HVAC units	120,000	3		C	2	c
	Replace Windows	128,000	3		E	2	c
	Exterior Restoration	140,000	1		C	2	c
	Install elevator	134,376	1		C	2	c
	Replace wiring	220,000	1		C	2	c
	Handicapped access	178,728	1		C	2	c
3	North Hall - classrooms, offices-Business, Marketing						
	Repair roof and coat	$ 66,800	1	VI	C	3	c
	Replace windows	143,000	3		E	2	c
	Install elevator	106,392	1		C	2	c
	Handicapped access	103,500	1		C	2	c
	Replace wiring	200,000	1		C	2	c
	Replace wood basement floor	110,000	1		C	2	c
4	West Hall - classrooms, offices-Business						
	Coat Roof	$ 52,280	1	VI	C	3	c
	Install elevator	142,500	1		C	2	c
	Handicapped access	100,600	1		C	2	c
	Replace wiring	160,000	1		C	2	c
5	Speech & Hearing - Speech Pathology & Audiology						
	~~Tuckpoint~~	$ ~~64,000~~	1		C	2	b
	Replace windows	154,000	3	III	E	2	b
	~~Gutter replacement~~	~~17,000~~	1		C	2	b
	~~Paint exterior~~	~~18,300~~	1		C	2	b
	Install elevator	84,500	1	II	C	2	b
	Handicapped access	72,000	1	II	C	2	b
	Replace wiring	150,000	1		C	2	b
6	Oakland Gymnasium - Physical Education & Military Science						
	Remove skylights	$ 90,000	3	III	E	2	d
	Replace windows	192,500	3	III	C	2	d
	Install elevator	134,700	1	II	C	2	d
	Handicapped access	90,000	1	II	C	2	d
	Replace wiring	120,000	1		C	2	d

WESTERN

BLDG. NO.	NAME	COST	H.E. CATEGORY	PRIORITIES CONSEQ.	NEED	FRE(
7	Vandercook - Residence Hall					
	Replace windows	$ 187,000	4	E	3	b
	Install elevator	146,000	4 V	C	3	b
	Handicapped access	170,000	4	C	3	b
8	Spindler - Residence Hall					
	Replace windows	$ 185,000	4	E	3	b
	Install elevator	160,000	4 V	C	3	b
	Replace wiring	140,000	4	C	3	b
9	Oakland Recital Hall - Classroom, Auditorium					
	~~Replace roof with rubber sheet~~	$ ~~66,000~~	1	C	2	d
	Tuckpoint	27,500	1	C	3	d
	Replace entrance doors	11,000	1	C	3	d
	Handicapped access	60,000	1 II	C	3	d
	Replace wiring	120,000	1	C	3	d
10	Walwood Hall - Residence Hall, Cafeteria					
	Tuckpoint	$ 27,500	1	C	3	b
	Replace exterior doors	11,000	1	C	3	b
	Install elevator	180,000	1 II	C	3	b
	Handicapped access	160,000	1 II	C	3	b
	Replace wiring	180,000	1	C	3	b
	Replace windows	87,000	3 III	E	3	b
11	Upholstery Shop - Upholstery					
	Replace roof	$ 30,000	4	C	3	c
	Tuckpoint	28,000	4	C	3	c
	Replace windows	96,000	3-4 II	E	3	c
	Replace wiring	30,000	4	C	3	c
	Replace transformers	80,000	3-4	B	3	c
12	Brink Printing Services - Printing, Graphic Arts					
	Replace windows	$ 120,000	3-4 III	E	3	c
	Handicapped access	60,000	4 II	C	3	c
15	Waldo Stadium - Football field, locker rooms					
	Pressbox roof replacement	$ 30,000	4	C	2	d
	Handicapped access	50,000	4 II	D	3	d
16	Hyames Field - Baseball field, toliets					
	Handicapped access	$ 50,000	4 I	D	3	d
	Van Dusen Building - Residence					
	Demolish structure	$ 140,000	6 VI	A	2	b
	Rebuild electrical vault (Houses transformer for buildings 17, 18, and 19 plus loop for KRPH buildings)	40,000	4-6	D	2	b

WESTERN

LDG. NO.	NAME	COST	H.E. CATEGORY	PRIORITIES CONSEQ.	NEED	FREQ.
17	Linda Richards Building - Residence					
	Install escape stairs from upper floors	$ 300,000	4	D	3	b
	Replace windows	340,000	3-4	E	3	b
	Install elevator	160,000	4 I	D	3	b
	Install fire alarm system	80,000	4	A	3	b
	Install temperature controls	26,000	3-4	E	3	b
18	H.O.I., (Central Stores) - & Dept. of Transporation Office					
	Replace roof	$ 65,000	4	C	2	d
	Tuckpoint	50,000	4	C	2	d
	Install fire alarm	90,000	4	C	3	d
19	Montague Cottage - Residence		4			
20	Airport Test Cell - Aircraft Engine Testing		1			
21	Physical Plant - Maintenance, shops & offices					
	Replace windows	$ 148,000	2-3 III	E	4	c
	Install fire sprinkler system	75,000	2 II	C	3	c
	Update electrical system	15,000	2	B	2	c
22	Greenhouse - Agriculture		1			
25	Department of Public Safety - Dept. of Public Safety					
	Tuckpoint	$ 12,000	2	C	3	a
	Replace heating system	50,000	2-3	C	3	a
26	Hillside East - Offices, Cistercian Library, Testing Services					
	Replace gutters	13,000	2	C	2	b
	Replace exterior doors	3,300	2	C	3	b
	Install elevator	180,000	2 II	C	3	b
	Handicapped access	100,000	2 II	C	3	b
	Replace wiring	60,000	2	C	3	b
26	Hillside West - Offices					
	Replace Gutters	$ 13,000	2	C	2	b
	Replace exterior doors	3,000	2	C	3	b
	Install elevator	180,000	2 II	C	3	b
	Handicapped access	100,000	2 II	C	3	b
	Replace wiring	60,000	2	C	3	b
27	McCracken Hall - Classrooms, Offices-Chemistry, Paper Science & Engineering					
	Cost new section roof	$ 15,900	1	C	3	c
	Replace seating, P. Tech Aud.	33,000	1	D	3	c
	Handicapped access	120,000	1 II	C	3	c
	Replace cooling tower	125,000	1	B	2	c

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WESTERN

BLDG. NO.	NAME	COST	H.E. CATEGORY	PRIORITIES CONSEQ.	NEED	FREQ
28	Burnham Hall - Residence					
	Replace partial roof	$ 77,000	4	C	3	b
	Replace windows	741,000	3-4 V	E	3	b
	Replace carpet	137,500	4	C	3	b
	Handicapped access	176,800	4	C	3	b
29	Maybee Hall - Classrooms, offices					
	Replace roof	$ 77,000	1	C	2	c
	Install elevator	120,000	1 III	C	2	c
	Handicapped access	120,000	1 II	C	2	c
30	Draper-Siedschlag Hall - Residence					
	Replace partial roof	$ 77,000	4	C	3	b
	Replace windows	741,000	3-4 V	E	3	b
	Handicapped access	176,800	4	C	3	b
	Replace carpet	137,500	4	C	3	b
31	Kanley Chapel - Offices-Religion					
	Replace roof	$ 77,000	2	C	2	d
	Install elevator	86,000	2 V	C	2	d
	Handicapped access	80,000	2	C	2	d
2	Seibert Administration Building - Offices					
	~~Replace penthouse roof~~	$ ~~22,000~~	2	C	2	b
	~~Replace E. Wing roof~~	~~75,000~~	2	C	2	b
	Remove glass block	250,000	2-3 VI	C	2	b
	Handicapped access	6,000	2 II	C	2	b
	Replace fire alarm	20,000	2	A	1	b
33	The Oaklands - Residence		4			
34	Knollwood Metal Building - Ceramics, Sculpture, Classroom		1			
35	Trimpe Distributive Education - Classroom, offices-Marketing					
	Coat roof	$ 22,000	1	C	3	c
	Handicapped access	50,000	1 I	C	3	c
36	Wood Hall - Classroom, Offices-Biology, Psychology, Geography					
	Handicapped access	$ 40,000	1 II	C	3	c
37	Elmwood Apt. A-Q - Resident Apartments					
	Replace windows	$ 538,000	3-4 V	E	3	b
	Install temperature controls	99,900	3-4	C	3	b
38	Sangren Hall - Classrooms, Offices-Art, Blind Rehabilitation, Education, Sociology					
	Handicapped access	$ 40,000	1 II	C	3	c
	Replace lab ventilating system	100,000	1-3 IV	A	1	c
	Replace partial roof	103,800	1	C	3	c

WESTERN

BLDG. NO.	NAME	COST	H.E. CATEGORY	PRIORITIES CONSEQ.	NEED	FREQ.
39	Knollwood Building - Classrooms, offices-Cermanics, Sculpture					
	Lower roof repairs	$ 27,500	1	C	3	c
	Tuckpoint	71,500	1	B	1	c
40	Miller Auditorium - Performing Arts					
	Coat roof	$ 64,500	4	C	3	d
	Waterproof walls	49,000	4	C	3	d
	Tuckpoint	27,500	4	C	3	d
41	Shaw Theater - Classroom-Theater					
	Coat roof	$ 17,200	1	C	3	c
	Waterproof walls	15,500	1	C	3	d
42	Brown Hall - Classrooms, offices-Communication Arts & Sciences, Languages					
	Coat roof	$ 19,000	1	C	3	c
43	Sprau Tower - Faculty Offices		1			
44	Kohrman Hall - Classrooms, offices-Applied Arts & Sciences					
	Replace partial roof	$ 105,000	1	C	3	c
	Handicapped access	131,551	1 II	C	3	c
45	Davis Hall - Residence					
	Replace windows	$ 354,000	3-4 V	E	3	b
	Handicapped access	170,000	4	D	3	b
46	Davis Food Commons - Cafeteria		4			
47	Moore Hall - Offices-Anthropology, Gen. Studies, Political Science, Social Work					
	Replace roof	$ 66,000	1	C	2	c
	Replace partial carpet	6,600	1	C	3	c
48	Zimmerman Hall - Residence		4			
49	Gary Physical Education - Physical Education					
	Coat roof	$ 32,900	1	C	3	c
	~~Replace fire alarm~~	~~20,000~~	1	A	1	c
	Handicapped access	212,000	1 I	D	3	c
52	Stadium Drive Apartments - Resident Apartments					
	Replace balance of windows	$ 226,000	3-4	E	3	b
	Install fascia panels	244,000	3-4 V	E	3	b
	Install wall waterproofing	123,000	4	C	3	b
	Replace partial roofs	55,000	4	C	3	b
53	Gabel-Lawson Recreation Building - Ice rink, Natatorium					
	Replace partial roof	$ 110,000	1	C	3	c

WESTERN

			H.E.	PRIORITIES		
BLDG. NO.	NAME	COST	CATEGORY	CONSEQ.	NEED	FRE
55	University Health Center - Medical, Physical Care					
	~~Replace roof~~	$ ~~125,300~~	4	C	2	d
56	Rood Hall - Classrooms, Offices-Physical Science, Math, Astronomy, Geology					
	Replace roof	$ 68,200	1	C	2	c
	Handicapped access	10,000	1 - II	C	3	c
57	Everett Hall - Faculty Offices					
	~~Replace roof~~	$ ~~[illegible]~~	1	C	3	b
58	Ellsworth Hall - Offices					
	Replace roof	$ 60,500	1	C	2	b
	Replace corridor carpet	4,500	1	C	3	b
59	University Student Center - Cafeteria, Recreation, Meeting Rooms					
	Handicapped access	$ 140,000	4 I	D	3	b
60	Henry Hall - Residence & Offices					
	Repair & roof coating	$ 55,000	4 V	C	3	b
	Handicapped access	28,000	4	C	3	b
61	Waldo Library - Library & Archives					
	Replace roof	$ 77,000	1	B	2	c
	Handicapped access	3,000	1 I	C	3	c
	Replace fire alarm	25,000	1	B	2	c
62	Read Fieldhouse - Basketball & Indoor Track					
	Coat lower roof	$ 22,200	4	C	3	d
	Handicapped access	45,000	4 - I	C	3	d
65	Hoekje Hall - Residence		4			
66	Goldsworth Valley Apt.s R-Z - Resident Apartments					
	Replace windows and doors	$ 300,000	3-4 V	E	2	b
67	Friedmann Hall - Classrooms, Offices-Economics, History, Philosophy					
	Replace partial roof	$ 28,000	1	C	2	c
	Coat roof	28,000	1 I	C	2	c
	Handicapped access	6,000	1	C	3	c
68	Dunbar Hall - Classrooms, Offices-Radio, Television					
	Replace partial roof	$ 25,300	1	B	2	c
	Waterproofing walls	30,000	1	C	3	c
	Handicapped access	7,300	1 II	D	3	c
69	Knauss Hall - Lecture Rooms-History, Math, Psychology					
	Replace partial roof	$ 41,300	1	C	2	d
	Handicapped access	18,000	1 II	D	3	d

WESTERN

BLDG. NO.	NAME	COST	H.E. CATEGORY	PRIORITIES CONSEQ.	NEED	FREQ.
70	Public Safety Annex - Offices					
	Handicapped access	$ 120,000	2 II	C	3	b
71	Goldsworth Valley Dorm. No. 3 - Residence, Library Archives Storage					
	Recaulk windows	$ 70,000	3-4 V	C	3	b
	Handicapped access	16,000	4	D	3	b
72	Goldsworth Valley Dorm No. 2 - Residence					
	Replace partical roof	$ 448,000	4 V	C	3	b
	Recaulk windows	70,000	3-4	C	3	b
	Handicapped access	20,000	4	D	3	b
73	Goldsworth Valley Dorm No. 1 - Residence					
	Replace partial roof	$ 376,000	4 V	C	3	b
	Recaulk windows	70,000	3-4	C	3	b
74	French Hall - Residence					
	Handicapped access	$ 80,000	4 V	D	3	b
75	Bigelow Hall - Residence					
	Handicapped access	$ 28,000	4 V	D	3	b
77	Faunce Student Services - Offices-Counseling, Housing, Student Aid, etc.					
	Handicapped access	$ 2,000	2 V	D	3	b
	Repair main stair treads	3,300	2	C	3	b
78	Aviation Building - Classrooms, Hangers, Offices-Aviation Mechanics					
	Paint exterior walls	$ 42,400	1	C	3	c
79	Aviation Storage - Classroom, Storage		1			
80	Parking Structure - Parking					
	Install slab drainage	$ 27,000	4 V	B	2	c
	Repair retaining embankment.	7,000	4	B	2	c
	Repair structure	47,000	4	B	3	c
	Seal deck	26,000	4	B	3	c
82	Dalton Center - Classrooms, Offices-Fine Arts		1			
84	Fetzer Center - Conference Center		4			
90	Central Stores -					
	Roof	$ 60,000	2	C	3	d
	Municipal Water, Cross Connection Elimination Campus Wide	$ 88,000	2 II	A	1	a
	Replace Steam and Electric Service - East Campus	$7,000,000	2 VI	B	2	a

WESTERN

BLDG. NO.	NAME	COST	H.E. CATEGORY	PRIORITIES CONSEQ.	NEED	FRE
	Campus Roadway Replacements					
	a. North Dormitory Reconst.	$ 149,000	2	B	2	a
	b. Arcadia Road Reconst.	194,000	2	B	2	a
	c. Purchase additional property for parking areas	110,000	2 IV	B	2	a
	Replacement of Air Conditioning Equipment including chilled water loop installment Phase I & II	$ 522,500	2	D	3	b

FE/A

COMPARATIVE STUDY ON HIGHER EDUCATION FINANCE

STATE OF MICHIGAN

JAMES J. BLANCHARD, Governor
COMMISSION ON THE FUTURE OF HIGHER EDUCATION
North Ottawa Building, Box 30026, Lansing, Michigan 48909
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COMPARATIVE STUDY ON HIGHER EDUCATION FINANCE

Prepared For

THE GOVERNOR'S COMMISSION ON THE FUTURE OF HIGHER EDUCATION

July 1984

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COMPARATIVE ANALYSIS

Introduction

The following report has been developed to help provide a comparative context for review of the level of public support presently available to Michigan's public higher education system.

The focus involved typically concentrates upon state general fund and, in some cases, local tax revenues available to public higher education as this is the data found in the research literature. Additional state fiscal support in the form of capital outlay or improvement dollars, energy improvement funds, deferred maintenance, etc, although important, are typically not included.

The data utilized have been drawn from the various national data bases available (see methodology section reference listing) and the states compared include those typically defined as part of the Midwest (Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio and Wisconsin).

In addition, comparative information is also provided, where available, for three additional states (California, New York, and Texas) typically associated with very high levels of higher education support.

The comparisons made focus upon the following parameters:

A. Relative system demand

Are there differences in the relative enrollment demands being placed on various sectors of public higher education in the states studied?

B. Relative system public support

Are there differences in the level of public support available to various sectors of public higher education in the states being studied?

C. Relative system consumer costs

Are there differences in the level of student costs (primarily tuition and fees) associated with enrollment in various segments of public higher education in the states being studied?

The different national data bases and models employed inevitably result in differences in the specific measures or yardsticks identified in the study. The emphasis in this analysis is not upon reconciling such methodological differences, but upon areas where these various measures appear to at least be signaling a consistent trend.

Data Analysis

Given the data limitations (methodology) and differences (introduction) noted, the following trends rather consistently appear:

I. Systems demand

It appears that Michigan's public higher education enrollment level is substantially higher than the Midwest and national averages.

This observation is based upon the following data:

A. ENROLLMENT AS A FUNCTION OF TOTAL POPULATION

		Higher Education 1981-82 Headcount Enrollment[1]			
State	Total 1980 Population[2]	Total Headcount Enrollment	Percent In (2- & 4-Yr.) Public Inst.	No. In Public (2- & 4-Yr.) Inst. Hi. Ed.	Percent of State Population
Illinois	10,993,000	659,623	76.4%	503,952	4.6%
Indiana	5,261,000	251,826	76.7%	193,151	3.7%
Iowa	2,836,000	143,105	69.8%	99,887	3.5%
Michigan	9,076,000	513,033	86.9%	445,826	4.9%
Minnesota	3,889,000	210,713	78.5%	165,410	4.2%
Ohio	10,633,000	521,396	73.8%	384,790	3.6%
Wisconsin	4,570,000	275,325	87.5%	240,909	5.3%
Midwest					
Totals	47,258,000	2,575,021		2,033,925	
Average		367,860	78.9%	290,561	4.3%
California	20,996,000	1,885,757	89.7%	1,691,524	8.0%
New York	17,833,000	1,014,863	56.4%	572,383	3.2%
Texas	12,307,000	716,297	87.4%	626,044	5.1%
Three-State					
Totals	51,136,000	3,616,917		2,889,951	
Average		1,205,639	79.9%	963,317	5.7%
National					
Totals	211,517,000	12,371,672		9,649,904	
Average		247,433	78.0%	192,998	4.6%

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[1] NCES, The Condition of Education, 1983, page 84.

[2] 1980 Census Report

Table IA shows that Michigan has a higher-than-average number and percentage concentration of students in its public two- and four-higher education system.

B. COLLEGE ATTENDANCE RATIO TO HIGH SCHOOL GRADUATES[3]

State	Total 1982 High School Graduates (Public and Private)	1983 FTE Public (2- & 4-Year) (College Enrollment)	Enrollment Per H. S. Graduates
Illinois	157,339	338,294	2.15
Indiana	78,191	149,728	1.91
Iowa	45,346	92,059	2.03
Michigan	134,482	309,604	2.30
Minnesota	66,429	121,360	1.83
Ohio	155,668	290,000	1.86
Wisconsin	74,348	187,170	2.52
Midwest			
Totals	711,803	1,488,215	
Average		212,602	2.09
California	265,924	982,000	3.69
New York	227,126	425,957	1.88
Texas	179,339	490,000	2.73
Three-State			
Totals	672,389	1,897,957	
Average		632,652	2.82
National			
Totals	2,997,110	6,849,992	
Average		137,000	2.29

Another way to measure or compare relative system demand is to look at public postsecondary enrollments in conjunction with statewide high school graduates.

Table IB shows that Michigan has a higher-than-average ratio of total public postsecondary enrollment to overall high school graduates.

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[3] Halstead, K. How States Compare in Financial Support of Public Higher Education, 1983-84, NIE, Michigan 1984. p. 21 and 29.

C. COLLEGE ATENDANCE RATIO TO POPULATION[4]

State	1982 Estimated State Resident Population	1983 FTE Public (2- & 4-Year) College Enrollment	FTE Enrollment Per 1,000 Population
Illinois	11,452,000	338,294	29.5
Indiana	5,487,000	149,728	27.3
Iowa	2,913,000	92,059	31.6
Michigan	9,116,000	309,604	34.0
Minnesota	4,143,000	121,360	29.3
Ohio	10,789,000	290,000	26.9
Wisconsin	4,758,000	187,170	39.3
Midwest			
Totals	48,658,000	1,488,215	
Average			30.6
California	24,576,000	982,000	40.0
New York	17,512,000	425,957	24.3
Texas	15,279,000	490,000	32.1
Three-State			
Totals	57,367,000	1,897,957	
Average			33.1
National			
Totals	231,529,000	6,849,992	
Average			29.6

While similar to Table IA, Halstead compares overall population to public fulltime equated enrollments. Table IC shows that Michigan has a higher-than-average public postsecondary enrollment per 1,000 state population.

While these measures are all different and they do not take into consideration such factors as out-of-state/foreign enrollments and statewide institutional configurations, they do all show a consistent pattern. The overall enrollment demand from all sources being experienced by Michigan public colleges and universities tends to be higher than both the Midwest and national averages.

Such demands on Michigan's public colleges are particularly interesting in light of the information regarding student costs and student aid that follow. Perhaps this enrollment pattern is further evidence of the comparatively high value that the recent State Board of Education survey found that Michigan residents place upon higher education.

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[4] Halstead, How States Compare In Financial Support of Public Higher Education, 1983-84, NIE, March 1984, p. 21 and 29.

It should also be noted that even with a 10 percent projected enrollment drop (as projected in the Governor's Commission on The Future of Higher Education Midyear Progress Report), if other factors are held constant, Michigan's student demand would still tend to rival the current Midwest and national averages. Table ID documents this conclusion.

D. PARAMETER COMPARISON WITH PROJECTED TEN PERCENT MICHIGAN ENROLLMENT DECLINE[5]

Factor	Michigan Parameter with Projected 10% Public Higher Education Enrollment Decline Included	Current Midwest Average	Current National Average
Public 2- and 4-year Headcount Enrollment to Population	4.4%	4.3%	4.6%
Public 2- and 4-year FTE Enrollment to High School Graduates	2.07	2.09	2.29
Public 2- and 4-year FTE Enrollment to 1,000 Population	30.6	30.6	29.6

II. System Support--Comparative Public Support

Michigan appears to generally support the ongoing operation of its public institutions of higher education at lower per capita and per student rates than are found at the regional and national levels.

This observation is, for the most part, based on comparisons of state-level operating budget appropriations and local tax revenues as the national data bases available do not include special use and capital improvement or capital outlay information.

It should be noted, however, that calls regarding capital outlay/improvement funds were made to each state in the Midwestern sample selected and that inclusion of the responses received does not alter the general operating fund trend noted (see Appendix B for by-state capital outlay summary).

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[5] See Tables IA-IC for derivation.

The argument can also be made that general fund and local tax base data, though incomplete, still offer a valid comparison of the relative levels of operating support being provided.

The observation underscored is based upon the following data:

A. STATE PUBLIC TWO- AND FOUR-YEAR GENERAL FUND APPROPRIATONS BY SELECTED POPULATION CATEGORIES

State	1983-84 State Direct Institution General Fund Appropriation[9]	1980 Total Population[6]		1980 18 and Over[7]		1980 Population 25-64[8]	
		Number	$ Per	Number	$ Per	Number	$ Per
Illinois	$996,884,000	10,993,000	$90.68	7,565,000	$131.77	5,046,000	$197.55
Indiana	480,418,000	5,261,000	91.31	3,570,000	134.57	2,379,000	201.94
Iowa	351,860,000	2,836,000	124.07	1,941,000	181.28	1,235,000	284.90
Michigan	839,979,000	9,076,000	92.55	6,158,000	136.40	4,156,000	202.11
Minnesota	566,875,000	3,889,000	145.77	2,637,000	214.97	1,697,000	334.04
Ohio	838,511,000	10,633,000	78.86	7,260,000	115.50	4,891,000	171.43
Wisconsin	572,311,000	4,570,000	125.23	3,128,000	182.96	2,039,000	280.63
Midwest							
Totals	$4,646,838,000	47,258,000		32,259,000		21,443,000	
Average			$98.33		$144.08		$216.7[illegible]
California	$3,056,512,000	20,996,000	$145.57	14,741,000	$207.35	10,068,000	$303.58
New York	1,813,236,000	17,833,000	101.68	12,713,000	142.63	8,586,000	211.18
Texas	2,256,812,000	12,307,000	183.38	8,292,000	272.16	5,388,000	418.85
Three-State							
Totals	$7,126,560,000	51,136,000		35,746,000		24,042,000	
Average			$139.37		$199.36		$296.42
National							
Totals	$24,251,534,000	211,517,000		146,348,000		97,504,000	
Average			$114.66		$165.71		$248.72

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[6] 1980 U. S. Census data.
[7] Ibid.
[8] Ibid.

[9] M. M. Chambers overall general fund higher education appropriation data less NASSGP direct student aid program allotment figures. See Table IIIA for derivation.

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Table IIA shows that Michigan's current public two- and four-year higher education general operating appropriations tend to be below the Midwest and national averages on a statewide per capita basis.

They ar[illegible] however, often more similar to the relatively large population states (Illinois and Ohio) than to the others included in the sample.

B. STATE PUBLIC TWO- AND FOUR-YEAR GENERAL FUND OPERATING APPROPRIATIONS BY HEADCOUNT STUDENT ENROLLMENT

State	1983-84 State Direct Inst. General Fund Appropriations[12]	1981-82[10] Public Headcount (2- and 4-Year) Enrollment	1981-82[10] Approp. Per Student	1983-84[11] Public Headcount (2- and 4-Yr.) Enrollment	1983-84[11] Approp. Per Student
Illinois	$996,884,000	503,952	$1,978	547,154	$1,822
Indiana	480,418,000	193,151	2,487	198,048	2,426
Iowa	351,860,000	99,887	3,523	107,217	3,282
Michigan	839,979,000	445,826	1,884	445,489	1,886
Minnesota	566,875,000	165,410	3,427	162,036	3,498
Ohio	838,511,000	384,790	2,179	394,741	2,124
Wisconsin	572,311,000	240,909	2,376	167,285	3,421
Midwest					
Totals	$4,646,838,000	2,033,925		2,021,970	
Average			$2,285		$2,298
California	$3.056,512,000	1,691,524	$1,807	N. A.	N. A.
New York	1,813,236,000	572,383	3,438	N. A.	N. A.
Texas	2,256,812,000	626,044	3,605	675,926	$3,339
Three-State					
Totals	$7,126,560,000	2,889,951		N. A.	
Average			$2,466		N.A.
National					
Totals	$24,251,534,000	9,649,904		N. A.	
Average			$2,513		N.A.

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[10] 1981-82 NCES data. See Table IA for derivation.

[11] 1983 Fall HEGIS headcount enrollment data from staff calls to states.

[12] M. M. Chambers Overall General Fund Higher Education Appropriation Data less NASSGP direct student aid program allotment figures. See Table IIIA for derivation.

Table IIB indicates that Michigan's current public two- and four-year higher education general fund operating appropriations while (a) higher in aggregate than all comparison states but Illinois; (b) also tend to be below the Midwest and national averages on a per headcount student basis.

As noted in the methodology section at the end of this paper, factors such as institutional type distribution and economics of scale may well be coming into play here.

C. STATE PUBLIC TWO- AND FOUR-YEAR STATE GENERAL FUND OPERATING APPROPRIATIONS BY FULLTIME EQUATED STUDENT ENROLLMENT[13]

State	1983 FTE Public (2- & 4-Yr.) Enrollment	1983-84 State Operating Appropriation	State Appropriation Per FTE Student
Illinois	338,294	$1,018,800,000	$3,012
Indiana	149,728	508,100,000	3,394
Iowa	92,059	338,700,000	3,680
Michigan	309,604	905,900,000	2,926
Minnesota	121,360	472,200,000	3,891
Ohio	290,000	857,300,000	2,956
Wisconsin	187,170	589,600 000	3,150
Midwest			
Totals	1,488,215	$4,690,600,000	
Average			$3,152
California	$982,000	$3,157,000,000	$3,215
New York	425,957	1,984,600,000	4,660
Texas	490,000	2,320,900,000	4,737
Three-State			
Totals	$1,897,957	$7,462,500,000	
Average			$3,932
National			
Totals	$6,849,992	$24,665,800,000	
Average			$3,601

Table IIC shows that the Halstead data, while somewhat different than that produced by Chambers (see Table IIB) basically confirms the same trend--namely, that Michigan's overall state-level, general fund dollars tend to be less than the Midwest and national averages on a FTE student basis as well.

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[13] Halstead, How States Compare in Financial Support of Public Higher Education, 1983-84, NIE, March, 1984, p. 29.

The Michigan average is, however, much closer to states (Ohio and Illinois) with similar enrollment levels. A similar observation can be made with regard to many of the other tables that follow.

D. STATE AND LOCAL PUBLIC TWO- AND FOUR-YEAR GENERAL OPERATING APPROPRIATION DOLLARS PER FTE STUDENT[14]

State	1983-84 State and Local Appropriations	1983-84 FTE Public College (2- & 4-Yr.) Enrollments	Dollars Per Student
Illinois	$1,198,000,000	338,294	$3,541
Indiana	508,500,000	149,728	3,396
Iowa	353,000,000	92,059	3,834
Michigan	1,003.900,000	309,604	3,243
Minnesota	472,200,000	121,360	3,891
Ohio	888,300,000	290,000	3,063
Wisconsin	670,500,000	187,170	3,582
Midwest			
Totals	$5,094,400,000	1,488,215	
Average			$3,423
California	$3,549,000,000	982,000	3,614
New York	2,208,600,000	425,957	5,186
Texas	2,415,400,000	490,000	4,929
Three-State			
Totals	$8,173,000,000	1,897,957	
Average			$4,306
National			
Totals	$26,369,900,000	6,849,992	
Average			$3,850

Table IID shows that, on a per FTE student basis, Michigan's current state general fund and local tax revenues combined still tend to fall below the Midwest and national averages.

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[14] Halstead, How States Compare In Financial Support of Public Higher Education, 1983-84, NIE, March 1984, p. 24 and 29.

The State of Washington also completes an annual comparative study of public higher education support. The Washington analysis utilizes the Chambers general fund appropriation data but updates it for subsequent legislative/executive office adjustments and deducts any such funds flowing to private and/or nondegree vocational institutions. Local tax funds and tuition and fee data are also collected by the State of Washington in direct survey efforts for inclusion in this analysis. Other data included come from established national data bases. Table IIE summarizes the most recent Washington data available with regard to the Midwest states under consideration in this paper:

E. 1981-82 STATE (GENERAL FUND) AND LOCAL TAX PUBLIC TWO- AND FOUR-YEAR HIGHER EDUCATION FUNDING[15]

State	Public FTE Enroll.	Adjusted State Funds		Local Funds		Total Funds	
		Aggregate Funds	Dollars Per FTE Student	Aggregate Funds	Dollars Per FTE Student	Aggregate Funds	Dollars Per FTE Student
Illinois	325,719	$998,600,700	$3,066	$159,799,600	$492	$1,158,400,300	$3,564
Indiana	145,431	482,494,000	3,328	100,000	0.69	482,594,000	3,328
Iowa	83,959	327,866,000	3,950	11,773,800	142	339,639,800	4,092
Michigan	308,814	848,532,000	2,755	85,000,000	276	933,532,000	3,031
Minnesota	124,556	446,692,000	3,602	-0-	-0-	446,692,000	3,602
Ohio	284,078	694,304,000	2,445	22,565,700	79	716,869,700	2,524
Wisconsin	181,858	509,522,000	2,815	56,952,700	315	566,474,700	3,130
Midwest							
Totals	1,454,415	$4,308,010,700		$336,191,800		$4,644,202,500	
Average			$2,963		$231		$3,194
National							
Totals	6,651,712	$22,235,527,900		$1,540,721,300		$23,776,249,200	
Average			$3,343		$232		$3,575

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[15] Financial Support of Higher Education, 1981-82--A National Comparison, Washington Council for Postsecondary Education, August, 1982, pages 22-23.

While this information is somewhat dated, it again shows that Michigan's state general fund dollars per student are below the Midwest and regional average. It also shows, however, that Michigan's local tax revenues per student are above the Midwest and national averages.

A similar trend is seen if the 1983-84 Halstead data is compared in this manner. Table IIF summarizes the Halstead figures involved.

F. 1983-84 PUBLIC (TWO- AND FOUR-YEAR) STATE (GENERAL FUND), LOCAL TAX AND TUITION REVENUE BY FTE STUDENT[16]

State	2- & 4-Yr. Public FTE Enrollment	State General Fund Dollars Total	State General Fund Dollars By FTE	Local Tax Funds Total	Local Tax Funds By FTE	Estimated Tuition Revenues Total	Estimated Tuition Revenues By FTE	Grand Total Funds Total	Grand Total Funds By FTE
Illinois	338,294	$1,018,800,000	$3,012	$179,200,000	$ 530	$ 288,600,000	$ 853	$1,486,600,000	$4,396
Indiana	149,728	508,100,000	3,394	400,000	3	256,300,000	1,712	764,800,000	5,108
Iowa	92,059	338,700,000	3,682	14,300,000	155	118,500,000	1,268	471,500,000	5,125
Michigan	309,604	905,900,000	2,926	98,000,000	316	497,400,000	1,609	1,501,300,000	4,858
Minnesota	121,360	472,200,000	3,902	-0-	-0-	140,000,000	1,157	612,200,000	5,060
Ohio	290,000	857,300,000	2,956	31,000,000	107	554,500,000	1,912	1,442,800,000	4,973
Wisconsin	187,170	589,600,000	3,153	80,900,000	433	228,000,000	1,219	898,500,000	4,805
Midwest									
Total	1,488,215	$4,690,600,000		$403,800,000		$2,083,300,000		$7,177,700,000	
Average			$3,152		$ 272		$1,400		$4,824

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[16] Halstead, How States Compare In Financial Support of Public Higher Education, 1983-84, pages 50-55.

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Michigan evidently relys more heavily upon both local tax subsidy (especially for its rather extensive public two-year community college system) and student tuition revenues than do most other states in the sample. The tuition data found here may also be useful in conjunction with section V of this paper which follows.

G. PER HEADCOUNT STUDENT STATE GENERAL FUND OPERATING APPROPRIATIONS BY INSTITUTIONAL CATEGORY (CARNEGIE)[17]

Public Four-Year Carnegie Classification System	1983-84 Midwest Regional Average[18]		1983-84 Michigan Institutional Average[19]		Michigan Difference	
	Campus Only	Total*	Campus Only	Total*	Campus Only	Total
Research I	$3,528	$4,546	$2,657	$4,065	$-871	$-481
Research II	2,932	3,832	2,759	3,584	-179	-248
Doctoral I	2,602	2,608	N.A.	N.A.	N.A.	N.A.
Doctoral II	2,318	2,318	2,354	2,354	+36	+36
Compre. I	2,133	2,133	2,156	2,156	+23	+23
Compre. II	2,296	2,296	2,067	2,067	-229	-229
Liberal Arts I	No public schools listed					
Liberal Arts II	No public schools listed					

No community college comparison computed to date.

Overall Public Four-Year Average	$2,721	$3,117	$2,425	$3,014	$-296	$-103

*Total includes state funding for adjunct activities such as extension operations, hospitals, etc.

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[17] Utilizing 1983-84 M. M. Chambers State Higher Education Operating Appropriation Data and 1982-83 NCES Headcount Enrollment Data by 1976-77 Carnegie Commission Institution Type Taxonomy.

[18] See Appendix A for data derivation background. Appendix available from Commission on Future of Higher Education.

[19] Ibid.

Table IIG demonstrates that when controlled for institutional differences, in most cases the Michigan per student state general fund appropriation level still falls below the regional average. The problem is evidently particularly acute at the higher cost research institutions.

Looking at Tables IIE, F and G, a potential funding conflict between access (two-year schools and regional four-year institutions) and research (Research I and II institutions) can be hypothesized.

H. PUBLIC FOUR-YEAR GENERAL FUND AND TUITION REVENUES PER FULLTIME EQUATED UNDERGRADUATE STUDENT[20]

	Midwest			Michigan			
Carnegie Classification	1983-84 G. F. Approp. (Total)	1982-83 U.G. T & F Average (F.T.)	Combined Total	1983-84 G. F. Approp. (Total)	1982-83 U.G. T & F Average (F.T.)	Combined Total	Total Difference
Research I	$4,546	$1,413	$5,959	$4,065	$1,761	$5,826	$-133
Research II	3,832	1,426	5,258	3,584	1,648	5,232	-26
Doctoral I	2,608	1,329	3,937	NA	NA	NA	NA
Doctoral II	2,318	1,463	3,781	2,354	1,290	3,644	-137
Compre. I	2,133	1,145	3,278	2,156	1,372	3,528	+250
Compre. II	2,296	986	3,282	2,067	1,180	3,247	-35
Liberal Arts I	No public schools listed						
Liberal Arts II	No public schools listed						

Key: Approp. = Appropriation
F.T. = Fulltime
G. F. = General Fund
T & F = Tuition and Fees
U.G. = Undergraduate

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[20] See Appendix A for derivation.

This table shows that when current general fund revenues and recent fulltime undergraduate tuition receipts are combined on a per student basis, Michigan institutions still tend, in most cases, to lag behind the Midwest average in terms of overall per undergraduate operating revenues being generated.

The Halstead model on funding by student as controlled for institutional cost differences is quite different from that constructed by staff in Appendix A and used in Tables IIG-H in terms of both procedures used and data included. Basically, the Halstead model:

1. Includes public two-year as well as public four-year institutions.

2. Includes local tax revenues as well as state general fund appropriations.

3. Makes some modifications to the Chambers state general fund appropriation data (see pages 12 and 13 of the paper cited for discussion).

4. Utilizes a different (10 part) institutional classification scheme to help account for school type related cost differences (see pages 13-14 of paper cited for definitions).

5. Applies a national average per fulltime equated appropriation rate to each state's actual enrollment mix (across the 10 part institutional matrix) in comparison with actual apropriations reported to determine a standardized "system support index." This index is then divided into the actual per fulltime equated appropriation (state general fund and local tax) amount to determine the system's "adjusted per student appropriation" amount (see pages 4, 5, 22 and 24 of paper cited for discussion).

Given these differences in methodology and scope, however, the Halstead data on "adjusted" state and local appropriations per fulltime equated student still tends to show that Michigan's average is slightly below the Midwest and national averages. Table I highlights the Halstead data involved from page 24 of the paper previously cited.

I. ADJUSTED PER FULLTIME EQUATED STUDENT STATE GENERAL FUND AND LOCAL TAX REVENUES

State	1983-84 Adjusted Per Fulltime Equated Student State/Local Tax Funds
Illinois	$3,651
Indiana	3,234
Iowa	3,277
Michigan	3,343
Minnesota	3,443
Ohio	2,890
Wisconsin	3,582
Midwest Average	$3,346
California	4,202
New York	5,458
Texas	4,564
Three-State Average	$4,741
National Average	$3,850

Since this Halstead construct combines state and local financial effort, however, it is possible for the effort of one funding source to mask the impact of the other. The reader should keep Tables IIE and F in mind in this regard,

J. STATE AND LOCAL SUPPORT AS A PERCENTAGE OF TOTAL CURRENT FUND REVENUES

1. Percent 1980-81 2- and 4-Year Public College Current Fund Revenues from State and Local Government[21]

State	Percent
Illinois	55.0%
Indiana	39.4%
Iowa	41.1%
Michigan	39.1%
Minnesota	37.5%
Ohio	38.1%
Wisconsin	48.0%
Midwest Average	42.6%
California	60.5%
New York	61.0%
Texas	55.6%
Three-State Average	59.0%
National Average	49.3%

2. Current Fund State Revenue Percentage[22]

State Government Funds	National Percent				Michigan Percent	
	1971		1981		1983	
	2-Year	4-Year	2-Year	4-Year	2-Year	4-Year
	40.8%	41.7%	50.3%	44.5%	29.05%	31.43%

Table IIJ demonstrates in yet another way Michigan's relatively lower reliance on state and local funds combined for public college operating expenses.

While these different data come from a variety of sources and are subject to a variety of limitations, the overall conclusion appears to be that Michigan tends to rely less on state appropriations for the general operating expense funding of its public higher education system than do other comparison states.

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[21] NCES--The Condition of Education, 1983, p. 110 (HEGIS data).
[22] NCES--The Condition of Education, 1983, p. 108 and Michigan Department of Education HEGIS Summary.

It can be noted as well, that even with the 10 percent projected enrollment drop (Governor's Commission Midyear Progress Report), if other factors are held constant, Michigan's per student state level general fund support still appears to be close to the Midwest regional average. Table IIK documents this position.

K. PARAMETER COMPARISON WITH PROJECTED TEN PERCENT MICHIGAN ENROLLMENT DECLINE[23]

Factor	Michigan Parameter with Projected 10% Enrollment Decline Included	Current Midwest Average	Current National Average
State General Fund Appropriation per Public (2- & 4-Year) Headcount Enrollment (Chambers)	$2,093	$2,285	$2,513
State General Fund Appropriation Per Public (2- & 4-Year) FTE Enrollment (Halstead)	3,251	3,152	3,601

Yet another way to look at the relative strength of a state's support for public higher education is to compare such appropriations to aggregate state personal income. While the information is somewhat dated, Table IIL which follows provides such a comparison.

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[23] See Tables IIB and IIC for derivation background

L. STATE GENERAL FUND APPROPRIATIONS TO AGGREGATE PERSONAL INCOME[24]

State	State General Fund Appropriation (In Millions)		Ten Year % Change	Aggregate State Personal Income (In Millions)		Ten Year % Change	Approp. to Pers. Inc. % Change Difference
	1970-71	1980-81		1970-71	1980-81		
Illinois	$477.55	$964.58	101.99%	$50,232	$120,434	139.76%	-37.77%
Indiana	173.98	459.64	164.19%	19,433	49,117	152.75%	+11.44%
Iowa	101.60	332.24	227.01%	10,725	27,328	154.81%	+72.2%
Michigan	343.69	757.77	120.48%	35,975	92,339	156.68%	-36.2%
Minnesota	143.45	477.95	233.18	14,851	39,744	167.62%	+65.56
Ohio	260.69	719.90	176.15%	42,368	102,410	141.72%	+34.43%
Wisconsin	181.24	511.07	181.99%	16,703	44,095	163.99%	+18.00%
Midwest							
Totals	$1,682.20	$4,223.15		$190,287	$475,467		
Averages			151.05%			149.87%	+ 1.18%
California	$817.13	$3,158.89	286.58%	$90,295	$259,551	187.45%	+99.13%
New York	746.53	1,644.36	120.27%	85,730	180,646	110.72%	+ 9.55%
Texas	343.52	1,464.68	326.43%	39,732	136,146	242.66%	+83.77%
Three-State							
Totals	$1,907.18	$6,267.93		$215,757	$576,343		
Averages			228.65%			167.13%	+61.52%

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[24] Hines, McCarthy and Cronon, State Support of Higher Education: Appropriation Viewed In Relation to Personal Income, Illinois State University, April 1982.

The overall U. S. percent changes reported in this study were 200 percent for appropriations and 169 percent for personal income or a net gain of about 31 percent for state general fund appropriations over the ten-year period covered.

While it must be noted that (1) Michigan started from a higher than Midwest average appropriation level in 1970-71 and (2) the study did not control for inflation; the raw data presented does show that public general fund support for higher education was somewhat eroded in Michigan in comparison to overall personal income for the period of time studied. The Michigan experience proved to be most similar to that documented for Illinois over the period of time studied.

This trend is consistent with that noted by Chambers in his ten-year general fund appropriation comparison that was controlled for inflation (see page 15 of the October 26, 1983 Chronicle of Higher Education). Table IIM summarizes the data involved.

M. STATE PUBLIC TWO- AND FOUR-YEAR HIGHER EDUCATION GENERAL FUND APPROPRIATIONS OVER TIME

	Change[25]			
State	2-Year Change and (Ranking)	10-Year Change and (Ranking)	2-Year Change Less Inflation & (Ranking)	10-Year Change Less Inflation & (Ranking)
Illinois	+ 8% (39)	+101% (46)	-2% (39)	-11% (45)
Indiana	+ 4% (46)	+116% (42)	-5% (46)	- 4% (42)
Iowa	+16% (16)	+158% (25)	+5% (17)	+14% (25)
Michigan	+ 5% (44)	+ 91% (50)	-5% (45)	-15% (50)
Minnesota	+12% (28)	+165% (22)	+2% (28)	+18% (22)
Ohio	+20% (8)	+156% (27)	+9% (9)	+13% (27)
Wisconsin	+12% (29)	+ 96% (48)	+2% (29)	-13% (48)
California	- 5% (49)	+172% (19)	-14% (49)	+21% (19)
New York	+17% (15)	+120% (40)	+ 6% (16)	- 2% (40)
Texas	+20% (6)	+356% (2)	+ 9% (7)	+103% (2)
National	+12%	+173%	+ 2%	+21%

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[25] M. M. Chambers (October 26, 1983 Chronicle, page 15).

III. System Support--State Funded Student Aid

Typically, a portion of each state's higher education support is distributed in the form of direct student assistance. Such funds are usually administered by a state agency which awards them to individual students based upon some measure of need and/or performance. Students receiving such funds can utilize them at any eligible postsecondary school authorized in the program statutes involved. Specific data regarding such resources are collected each year by the National Association of State Scholarship and Grant Programs (NASSGP) in their annual report and by M. M. Chambers in his general fund appropriation comparison.

Another less visible and often more difficult to tabulate aspect of state funded student financial aid is the dollars that states award to individual campuses as part of their general fund allocation which is in turn used by the campuses themselves for various student aid related purposes. Since the issue becomes essentially a resource allocation matter once the state funds reach the campus level, the overall general fund comparison that has already been made in Section II of this paper does include any state funds that the institutions may have chosen to devote to student aid purposes.

To make the state student aid comparisons as complete as possible, however, an attempt has been made to add such state funded, but campus allocated/administered, aid to the centrally administered NASSGP data in the following comparisons.

In doing so, it must be noted that schools in different states tend to handle such funds in a variety of ways--scholarship/grant funds, work study (CWS) or loan (NDSL) match, graduate fellowships, tuition waivers, etc. In at least one state contacted, there was also indication that there would be a negative fiscal incentive related to state general fund dollars utilized in this manner. The institutional portion of any state student aid funds provided here is also a function of the relative sophistication of the resource expenditure data collection system in place within the state in question. Thus, it must be remembered that the institutionally expended state student aid figures added to the centrally distributed NASSGP data listed in the tables that follow cover broad usage categories and at best often represent estimates of the actual fund utilization practices involved.

Another complicating factor in the state funded student aid comparison that follows is that often a portion of the funds involved are utilized by students attending private or vocational schools. Such funds have not been excluded in these comparisons, however, as it can be argued that state funded student aid utilized at private schools still represents a portion of the state's overall student aid investment or commitment.

Within this context, it appears that Michigan generally (1) provides a lower percentage of its state higher education operating funds in the form of centrally administered student financial aid, and (2) supports a lower direct aid per student allocation than other states in the region.

This observation is based upon the following data:

A. STATE STUDENT AID AS A PERCENTAGE OF TOTAL STATE GENERAL FUND APPROPRIATIONS FOR HIGHER EDUCATION

State	Total Public Two- & Four-Yr. 1983-84 Higher Education Appropriation[26]	Total 1983-84 State Student Aid			State Student Aid Percent of Total High. Ed. Appro.	
		Centrally Admin.[27]	Estimate of Amt. Allocated to Aid Purposes by Schools[28]	State Aid Total	Cent. Admin. Only	Cent & Inst. Admin. Total
Illinois	$1,106,007,000	$ 109,123,000	$61,819,800	$170,942,800	9.87%	15.46%
Indiana	503,484,000	23,066,000	8,241,000	31,307,000	4.58%	6.2%
Iowa	372,128,000	20,268,000	9,525,000	29,793,000	5.44%	8.0%
Michigan	887,471,000	47,492,000	40,000,000	87,492,000	5.35%	9.8%
Minnesota	612,209,000	45,334,000	1,428,000	46,762,000	7.40%	7.6%
Ohio	883,761,000	45,250,000	Practice uncertain; no data available*	N.A.	5.12%	N.A.
Wisconsin	595,843,000	23,532,000	30,294,000	53,826,000	3.95%	9.0%
Midwest Totals	$4,960,903,000	$ 314,065,000	$151,307,800 (6-State Total)	$420,122,800 (6-State Total)	6.33%	10.3% (6-State Avg.)
Average		44,866,000				
California	$3,150,376,000	$ 93,864,000	N.A.	N.A.	2.97%	N.A.
New York	2,166,908,000	353,672,000	N.A.	N.A.	16.32%	N.A.
Texas	2,282,342,000	25,530,000	N.A.	N.A.	1.11%	N.A.
Three-state Total	$7,599,626,000	$ 473,066,000	N.A.	N.A.	6.22%	N.A.
Average		157,689,000				
National Total	$25,476,649,000	$1,225,115,000	N.A.	N.A.	4.81%	N.A.
Average		25,503,000				

*In Ohio, this practice is not recorded and institutional usage of general fund dollars in this manner would evidently be negatively reinforced.

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[26] M. M. Chambers, Appropriations/State Tax Funds for Operating Expenses of Higher Education, 1983-84, NASULGC, 1984.

[27] NASSGP, 1983-84 Annual Report

[28] Staff calls to individual states.

Table IIIA shows that while Michigan's dollar amount of state funded student aid actually exceeds the Midwest mean, as a percent of total general fund appropriations, it still lags slightly behind the Midwest average. This is particularly true when centrally administered aid alone is considered.

B. STATE STUDENT AID PER PUBLIC COLLEGE ENROLLEES

	1983-84 State Student Dollars[29]		Public 2- & 4-Year Enrollments[30]		Aid Dollars Per Student			
					Centrally Admin.		Total Total	
State	Centrally Admin.	Total Incl. Local Alloca. Estimate	81-82 Hdct.	83-84 FTE	Hdct.	FTE	Hdct.	FTE
Illinois	$ 109,123,000	$170,942,800	503,952	338,294	$217	$323	$339	$505
Indiana	23,066,000	31,307,000	193,151	149,728	119	154	162	209
Iowa	20,268,000	29,793,000	99,887	92,059	203	220	298	324
Michigan	47,492,000	87,492,000	445,826	309,604	107	153	196	282
Minnesota	45,334,000	46,762,000	165,410	121,360	274	374	283	385
Ohio	45,250,000	N.A.	384,790	290,000	118	156	N.A.	N.A.
Wisconsin	23,532,000	53,826,000	240,909	187,170	98	126	223	288
Midwest Totals Average	$ 314,065,000	$420,122,800 (6-state total)	2,033,925	1,488,215	$154	$211	$255	$351 (6-state avg.)
California	$ 93,864,000	N.A.	1,691,524	982,000	$ 55	$ 96	N.A.	N.A.
New York	353,672,000	N.A.	572,383	425,957	618	830	N.A.	N.A.
Texas	25,530,000	N.A.	626,044	490,000	41	52	N.A.	N.A.
Three-State Total Average	$ 473,066,000	N.A.	2,889,951	1,897,757	164	249	N.A.	N.A.
National Total Average	$1,225,115,00	N.A.	9,649,904	6,849,992	127	179	N.A.	N.A.

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[29] See Table IIIA for derivation background

[30] See Tables IA and IB for derivation background.

This information shows that Michigan tends to invest less than the regional and national average per student amounts in its state funded student aid efforts.

There are no comparative measures of overall need by state for financial assistance programming that would permit assessment of the relative adequacy of the program funding levels identified in Tables IIIA and IIIB.

Attempts at such comparisons are also complicated by the fact that not all student aid programs use need as their primary criterion for distribution--many merit based and other types of programs also exist.

Given the difficulty associated with attempting this sort of need-based, state, student aid adequacy comparison, however, one way to make a rough comparative analysis is to look at state program funding levels by Pell Grant volume. The federal Pell Grant program is (1) by far the single biggest, strictly need based, student aid program and (2) probably one of the most widely known aid options utilized by a broad range of students at a variety of institutions. Thus, Pell Grant recipient levels can provide a fair estimate of the relative distribution of needy students across states.

Table IIIC compares state student aid by Pell recipient volume.

C. STATE STUDENT AID DOLLARS BY PELL RECIPIENT VOLUME

State	1932-83 Estimated Number of Pell Number of Pell Recipients[32]	1983-84 State Funded Student Aid[31]		State Student Aids Funds Per Pel. Recipient	
		Centrally Admin. 1983-84 State Student Aid Appropriations[33]	Total 1983-84 State Student Aid Including Estimate of Institutional Allocation	Centrally Adm. Only	Total
Illinois	110,500	$109,123,000	$170,942,800	$992	$1,554
Indiana	54,000	23,066,000	31,307,000	427	580
Iowa	31,900	20,268,000	29,793.000	633	931
Michigan	128,800	47,492,000	87,492,000	371	679
Minnesota	54,500	45,334,000	46,762,000	839	858
Ohio	100,100	45,250,000	N.A.	452	N.A.
Wisconsin	51,000	23,532,000	53,826,000	461	1,055
Midwest					
Totals	531,200	$314,065,000	$420,122,800		
Average			(6-state avg.)	$591	$975
California	202,900	$93,864,000	N.A.	$465	N.A.
New York	297,000	353,672,000	N.A.	1,191	N.A.
Texas	126,000	25,530,000	N.A.	203	N.A.
Three-State					
Totals	625,900	$473,066,000	N.A.		
Average				$757	N.A.
National					
Totals	2,600,000	$1,225,[illegible]15,000		$471	N.A.

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[31] See Table IIIA for derivation background.

[32] Student Aid Budget Cuts: An Impact Study, ECS and Texas GSL Corp., April 1982.

[33] See Table IIIA for derivation background.

Table IIIC shows that Michigan's state student aid programs are currently funded at a lower level than the regional and national per Pell recipient averages.

IV. System Support Tax--Capacity and Utilization

Michigan appears to be generating state and local tax revenue in excess of its theoretical "capacity." However, a smaller than average share of these revenues is directed toward its higher education system. Thus, it would appear reasonable that the potential for enhanced higher education finance should come more from a redirection of priorities than from overall revenue enhancements.

These observations are based upon the following data:

A. 1982 AND LOCAL TAX EFFORT[34]

State	1982 National Average Tax Capacity	1982 Per Capita State and Local Tax Revenues Actually Collected	State and Local Per Capita Tax Revenues Collected As A Percent of Theoretical Capacity (Tax Effort)
Illinois	$1,102	$1,156	104.9%
Indiana	991	870	87.9%
Iowa	1,113	1,119	100.5%
Michigan	1,069	1,239	115.9%
Minnesota	1,102	1,218	110.5%
Ohio	1,013	959	94.7%
Wisconsin	968	1,231	127.1%
Midwest Average	$1,051	$1,113	105.9%
California	$1,291	$1,275	98.8%
New York	991	1,726	174.3%
Texas	1,499	953	63.6%
Three-State Average	$1,260	$1,318	104.6%
National Average	$1,113	$1,113	100.0% by definition

Table IVA shows that in 1982 Michigan was generating State and local revenues equal to approximately 116 percent of its theoretical national average taxation system capacity.

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[34] Halstead model construct based on application of a national average taxation system to each state's respective tax base. Tax effort measures as a percentage, how a state's actual tax structure compares to this theoretical average capacity. It shows how much of a state's theoretical (national average) tax capacity is actually used. For further construct background see: Halstead, How States Compare In Financial Support of Public Higher Education, NIE, March 1984, pages 5-6 and 22-23.

B. HIGHER EDUCATION OPERATING FUND ALLOCATION OF STATE AND LOCAL TAXES[35]

State	Percent State and Local Taxes Allocated Two- and Four-Year Public Higher Education Operation by Year						Percent Change 1977-78 to 1983-84
	1977-78	1979-80	1980-81	1981-82	1982-83	1983-84	
State	1977-78	1979-80	1980-81	1981-82	1982-83	1983-84	1983-84
Illinois	8.9%	9.0%	9.3%	9.0%	8.5%	9.0%	+0.1%
Indiana	10.8%	10.8%	11.4%	11.4%	10.3%	10.6%	-0.2%
Iowa	11.2%	12.3%	11.5%	11.4%	12.1%	10.8%	-0.4%
Michigan	9.9%	9.7%	8.2%	8.4%	8.6%	8.9%	-1.0%
Minnesota	9.2%	9.4%	8.7%	9.0%	9.2%	9.4%	+0.2%
Ohio	8.8%	9.0%	8.9%	8.6%	8.2%	8.6%	-0.3%
Wisconsin	11.7%	11.3%	11.7%	11.8%	11.4%	11.4%	-0.3%
Midwest Average	9.7%	10.2%	10.0%	9.9%	9.8%	9.4%	-0.3%
California	12.9%	12.0%	15.5%	13.9%	12.4%	11.3%	-1.6%
New York	6.1%	6.8%	7.0%	7.1%	6.9%	7.3%	+1.2%
Texas	15.0%	16.4%	16.8%	18.1%	16.2%	16.6%	+1.6%
Three-State Average	10.3%	11.7%	13.1%	13.0%	11.8%	10.7%	+0.4%
National Average	10.3%	10.6%	11.0%	10.9%	10.4%	10.2%	-0.1%

While this information has not been controlled for inflation, the raw data in Table IVB tends to indicate that the percent

While this information has not been controlled for inflation, the raw data in Table IVB tends to indicate that the percent

of state and local tax dollars directed toward public higher education in Michigan has dropped more than the regional and national average over the seven-year period that Halstead has been conducting this annual analysis.

This information by itself does not mean that the overall dollar amount of such revenues targeted for public higher education has actually declined or failed to keep pace with inflation. It simply means that public higher education general fund and local tax revenues have not remained as a constant percentage of total state and local tax revenues generated over time. Table IVC presents the comparative Halstead dollar figures involved.

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[35] Halstead, How States Compare In Financial Support of Public Higher Education, NIE, March 1984, pages 6, 23, 29-59.

C. STATE AND LOCAL TAX REVENUES TO PUBLIC TWO- AND FOUR-YEAR GENERAL FUND HIGHER EDUCATION OPERATING APPROPRIATIONS OVER TIME[36]

	1977-78			1983-84			Seven-Year Percent Change		
State	Total State and Local Tax Revenue (In Millions)	Total State General Fund and Local Higher Educ. Appropriations (In Millions)	Public Higher Educ. Percent Total	Total State and Local Tax Revenue (In Millions)	Total State General Fund and Local Higher Educ. Appropriation (In Millions)	Public Higher Educ. Percent Total	Total Tax Revenue	Total St. General Fund & Local Hi. Ed. Approp.	Public Higher Educ. Percent Change Over Time
Illinois	$8,639.8	$773.2	8.9%	$13,240.6	$1,198.0	9.0%	+53%	+55%	+0.1%
Indiana	3,118.3	336.6	10.8%	4,776.3	508.5	10.6%	+53%	+51%	-0.2%
Iowa	2,010.8	224.4	11.2%	3,260.7	353.0	10.8%	+62%	+57%	-0.4%
Michigan	6,819.3	675.3	9.9%	11,294.2	1,003.9	8.9%	+66%	+49%	-1.0%
Minnesota	3,261.9	298.5	9.2%	5,046.5	472.2	9.4%	+55%	+58%	+0.2%
Ohio	6,262.1	552.7	8.8%	10,345.8	888.3	8.6%	+65%	+61%	-0.2%
Wisconsin	3,643.7	427.5	11.7%	5,856.9	670.5	11.4%	+61%	+57%	-0.3%
Midwest									
Totals	$33,755.9	$3,288.2		$53,821.0	$5,094.4				
Averages			9.7%			9.4%	+59%	+54%	-0.3%
California	$20,749.5	$2,682.9	12.9%	$31,344.6	$3,549.0	11.3%	+51%	+32%	-1.6%
New York	20,614.5	1,248.7	6.1%	30,233.2	2,208.6	7.3%	+47%	+77%	+1.2%
Texas	7,258.6	1,085.4	15.0%	14,560.6	2,415.4	16.6%	+100.6%	+122.5%	+1.6%
Three-State									
Total	$48,622.6	$5,017.0		$76,138.4	$8,173.0				
Average			10.3%			10.7%	+56.6%	+63%	+0.04%
National									
Total	$156,504.2	$16,194.1		$257,704.2	$26,369.9				
Average			10.3%			10.2%	+65%	+63%	-0.1%

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[36] Halstead, How States Compare in Financial Support of Public Higher Education, NIE, March 1984, pages 6-7, 23 and 29-59.

Table VC shows that while there have been substantial gains over time in both total state and local taxation revenues and in overall state and local higher education funds, the growth rate demonstrated in these two revenue areas tends to be more divergent in Michigan than is the case on a regional or national basis.

Yet another way to demonstrate this trend is to chart constant (inflation controlled) per student revenues over time. Table IVD makes this comparison from the Halstead data.

D. CONSTANT DOLLAR STATE GENERAL FUND AND LOCAL TAX PUBLIC TWO- AND FOUR-YEAR REVENUES CHANGE OVER TIME (1977-78 to 1983-84)[37]

State	Constant Dollar Change
Illinois	-5.5%
Indiana	-7.9%
Iowa	-4.1%
Michigan	-9.4%
Minnesota	-3.5%
Ohio	-2.0%
Wisconsin	-4.6%
California	-19.3%
New York	+7.8%
Texas	+35.7%
National Average	-0.7%

Table IVD shows that in constant dollars, Michigan's state (general fund) and local tax revenues for public higher education have declined more than any other state in the Midwest sample studied. Of the other states reviewed, only California's percentage has declined more sharply.

These different comparative measures have shown in a variety of ways that (1) while Michigan's tax effort is relatively high, (2) its percentage allotment to public higher education is relatively low, and (3) the discrepancy in rates of growth between total tax revenue and higher education tax resources (state general fund and local) in the state appears to be growing.

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[37] Halstead, How States Compare in Financial Support of Public Higher Education, 1983-84, NIE, March 1984, page 24.

V. System Consumer Costs--Tuition Emphasis

Michigan appears to rely more heavily on consumer generated tuition and fee revenues to help finance its public higher education system than do other states in the Midwest sample and the national average at large.

This observation is based upon the following data:

A. 1983-84 TUITION AND FEE FACTOR

State	Ratio of State and Local Government Appropriations Plus Student Tuition and Fee Revenues (Two- and Four-Year Public) to State and Local Government Appropriation[38]
Illinois	1.24
Indiana	1.50
Iowa	1.34
Michigan	1.50
Minnesota	1.30
Ohio	1.62
Wisconsin	1.34
Midwest Average	1.40
California	1.14
New York	1.19
Texas	1.15
Three-State Average	1.16
National Average	1.27

The ratios listed in Table VA show the relative importance of tuition and fee revenues as a funding source compared to state general fund and local appropriations alone.

Michigan's comparatively high reliance upon tuition and fee revenue, however, could be a function of enrollment volume as well as tuition rate levels themselves. The tables that follow put the tuition issue into focus on a per student basis.

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[38] Halstead, How States Compare in Financial Support of Public Higher Education, 1983-84, NIE, March 1984, pages 7, 24 and 28.

B. ESTIMATED 1983-84 PUBLIC TWO- AND FOUR-YEAR UNDERGRADUATE AND GRADUATE TUITION AND FEE REVENUES COMBINED PER FULLTIME EQUATED STUDENT[39]

	Actual			
State	Estimated Total Tuition & Fee Revenues	Fulltime Equated Public Enrollment	Per Student Average	Adjusted Enrollment by Category for Halstead Institutional Cost Mix
Illinois	$288,600,000	338,294	$ 853	$ 917
Indiana	256,300,000	149,728	1,712	1,463
Iowa	118,500,000	92,059	1,287	1,073
Michigan	497,400,000	309,604	1,607	1,575
Minnesota	140,000,000	121,360	1,154	961
Ohio	554,500,000	290,000	1,912	1,567
Wisconsin	228,000,000	187,170	1,218	1,107
Midwest Totals	$2,083,300,000	1,488,215		
Average			$1,400	$1,238
California	$505,600,000	982,000	$515	$ 636
New York	425,200,000	425,957	998	1,122
Texas	360,900,000	490,000	737	744
Three-State Totals	$1,291,700,000	1,897,957		
Average			$ 681	$ 834
National Totals	$7,178,200,000	6,849,9[illegible]		
Average			$1,048	$1,048

Table VB shows that on a per fulltime equated basis, Michigan's average tuition and fee revenue generated is substantially higher than both the Midwest and national averages. This also continues to be the case after the raw data involved are adjusted by the Halstead model for the differing level of costs associated with the public institutional category attendance mix found in each state. This conclusion is consistent with the tuition information presented earlier in Table IIF.

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[39] Halstead, How States Compare in Financial Support of Public Higher Education, 1983-84, NIE, March 1984, pages 7, 24 and 29.

A similar comparison can be made using the staff developed model which uses 1982-83 NCES data regarding student tuition and fee costs across the Carnegie institutional type classification system. Table VC summarizes this information.

C. AVERAGE PUBLIC FOUR-YEAR FULLTIME UNDERGRADUATE INSTATE TUITION AND FEES BY CARNEGIE CLASSIFICATION SYSTEM

Carnegie Institutional Category	Average 1982-83 Institutional Tuition and Fees[40]					
	Instate Undergraduate			Instate Graduate		
	Midwest Average	Michigan Average	Difference	Midwest Average	Michigan Average	Difference
Research I	$1,413	$1,761	$+348	$1,759	$2,390	$+631
Research II	1,426	1,648	+222	1,814	2,048	+234
Doctoral I	1,329	NA	NA	1,523	NA	NA
Doctoral II	1,463	1,290	-173	1,645	1,362	-283
Compre. I	1,145	1,372	+227	1,260	1,377	+117
Compre. II	986	1,180	+194	1,127	1,528	+401
Liberal Arts I	No public schools listed					
Liberal Arts II	No public schools listed					

Table VC shows that the fulltime undergraduate and graduate tuition and fee rates at Michigan public four-year colleges and universities tend to be higher than the Midwest averages for all but one of the Carnegie classification categories.

Looking at fulltime institutional tuition and fee data on a simple statewide average basis also shows that instate public four-year fulltime study charges are higher than the Midwest average. Computed in this manner, however, Michigan's public two-year community college, fulltime, tuition and fee average is less than the Midwest average involved. Table VD summarizes this information.

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[40] See Appendix A for derivation.

D. AVERAGE STATEWIDE 1982-83 FULLTIME UNDERGRADUATE TUITION AND FEE CHARGES[41]

	1982-83 Average Fulltime Tuition and Fee Charges					
			Public Four-Year			
			In State		Out-of-State	
	Public Two-Year					
State	In State	Out-of-State	Undergraduate	Graduate	Undergraduate	Graduate
Illinois	$529	$2,103	$1,110	$1,227	$2,752	$3,039
Indiana	977	1,858	1,184	1,272	2,924	2,875
Iowa	713	1,105	1,023	1,157	2,400	2,643
Michigan	716	1,181	1,424	1,595	3,401	3,537
Minnesota	869	1,857	1,135	1,234	2,352	2,656
Ohio	1,161	2,344	1,512	1,467	3,308	3,555
Wisconsin	647	2,699	1,027	1,276	3,427	3,829
Midwest Average	$802	$1,878	$1,202	$1,283	$2,937	$3,162
California	$56*	$2,112	692	707	3,596	3,599
New York	1,036	1,868	1,216	1,842	1,896	2,320
Texas	255	756	396	505	1,421	1,234
Three-State Average	$449	$1,579	$768	$1,018	$2,304	$2,384

*For all public two-year campuses showing a tuition and fee charge.

Not only do Michigan's public four-year tuition and fee charges appear to be higher than those found in the Midwest in general, there is some evidence that on-campus room and board rates may also be above those generally found in the region. Table VE summarizes this information.

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[41] Computed by staff from 1982-83 by school data found in College Costs: Basic Student Charges for Four-Year and Two-Year Institutions, NCES, 1983.

E. AVERAGE 1982-83 PUBLIC FOUR-YEAR ON-CAMPUS ROOM AND BOARD RATES[42]

State	1982-83 (Simple by Campus) Average Room and Board Rates at Public Four-Year Institutions
Illinois	$2,250
Iowa	1,771
Michigan	2,258
Minnesota	1,655
North Dakota	1,443
South Dakota	1,495
Wisconsin	1,895

Comparative HEGIS data available offers yet another view of the relative tuition and fee reliance issue.

F. CURRENT FUND REVENUE TUITION AND FEE PORTION

	National Average[43]				Michigan[44]	
	1971		1981		1983	
Category	2-Yr.	4-Yr.	2-Yr.	4-Yr.	2-Yr.	4-Yr.
Student Tuition and Fee Percentage of Current Fund Revenues	13.0%	13.1%	15.2%	12.4%	27.29%	20.22%

Table VF again shows that Michigan tends to rely more extensively on tuition and fee resources for its current fund revenues than public schools do on a national average basis.

Yet another approach to this issue can be derived from the data found in the Halstead paper. From this information it is possible to compare actual tuition and fee revenues generated by public two- and four-year colleges with a constructed average. This average is based upon application of Halstead's national average tuition rate by institutional category to each state's enrollment distribution pattern.

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[42] State of Minnesota, Higher Education In the Upper Midwest, 1983, page 49.

[43] NCES, The Condition of Education, 1983, p. 108.

[44] MDE HEGIS Summary.

1981-82 is the most current year for which all the necessary components for such a comparison are provided in the Halstead paper. Table VG summarizes this information.

G. ACTUAL VS. PROJECTED 1981-82 TUITION AND FEE REVENUES[45]

State	1981-82 Public 2- & 4-Year Tuition & Fee Revenues Generated	1981-82 Projected Public 2- & 4-Yr. Tuition & Fee Revenues Using National Average Tuition & Fee Rates by Halstead Inst. Classif. & State Enrollment Mix	Percent Actual of Projected
Illinois	$246,900,000	$297,697,643	83%
Indiana	196,700,000	165,698,244	119%
Iowa	95,400,000	104,708,889	91%
Michigan	430,200,000	301,333,913	143%
Minnesa	106,600,000	138,623,624	77%
Ohio	400,000,000	334,828,200	119%
Wisconsin	198,000,000	195,093,697	101%
Midwest Totals	$1,673,800,000	$1,537,984,210	
Average			109%

Table VG shows that Michigan exceeds its "national average" tuition and fee revenue "capacity" by more than any other state in the sample studied.

The preceeding data come from a variety of sources which use differing formats and assumptions. The general trend that seems to emerge, however, regardless of which model is used, is that Michigan public four-year colleges tend to have higher-than-average consumer-related (tuition and fee as well as room and board) costs. In some comparisons, the Michigan average is closer to that found in other large enrollment states (Illinois and Ohio) than to the overall Midwest or national norms.

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[45] Halstead, How States Compare in Financial Support of Public Higher Education, 1983-84, NIE, March 1984, pages 15 and 50-56.

Implicitly or explicitly, Michigan has made a policy decision to let the public bear a relatively high cost for its public higher education system.

CONCLUSIONS

Within the limitations cited in the methodology section, the following conclusions can be drawn from the data viewed:

1. Michigan tends to be a relatively high demand state, enrolling greater numbers in its public higher education system than the Midwest average.

2. Michigan tends to support its public institutions of higher education at a lower per student operating level than the Midwest average.

3. Michigan's state funded student aid programs tend to be supported at a lower per student level than the Midwest average.

4. Michigan's current state and local taxation system appears to be above the Midwest average and national norms but the percentage of such revenues collected that are focused upon public higher education appears to be below those levels.

5. The consumer-related tuition and fee charges associated with attendance at public Michigan colleges and universities appear to be above the Midwest average.

In some respects the Michigan data tend to parallel the experience of the other large enrollment states studies (Illinois and Ohio) more closely than it does the overall Midwest average.

In responding to these conclusions, the Commission may choose to:

A. Allow the current system to simply continue at its current rate of funding and let marketplace forces run their course.

B. Suggest increased funding to provide the current system with a more adequate base of support.

C. Suggest system economies that by themselves or in conjunction with increased overall funding would provide a more adequate base of support.

1982-83 MICHIGAN COLLEGE AND UNIVERSITY UNDERGRADUATE STUDENT FINANCIAL AID SURVEY

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STATE OF MICHIGAN

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1982-83 MICHIGAN COLLEGE AND UNIVERSITY UNDERGRADUATE STUDENT FINANCIAL AID SURVEY

Prepared For
THE GOVERNOR'S COMMISSION ON THE FUTURE OF HIGHER EDUCATION

August 1984

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SURVEY HIGHLIGHTS

Needy Students

Table 1A

1. In the eight years covered by this survey project, the number of needy undergraduates applying for aid has increased about 87 percent from 94,740 (1974-75) to 177,541 (1982-83).

   By comparison, the number of fulltime equated (FTE) undergraduates reported rose only about 13 percent over this same period of time.

   In 1974-75 needy students made up about 33 percent of the FTE undergraduate enrollment. In 1982-83 that percentage had increased to 55 percent. This percentage fluctuates substantially by type of school due to the cost difference involved.

   The disproportionate increase in the number of needy students is probably due to a number of factors such as (1) changes in the need calculation system, (2) increases in college costs, (3) changes in the enrollment mix and (4) changes in the economy.

Table IB 1 and 2

2. While their numbers have increased, minorities have dropped from about 30 percent of the needy undergraduate pool reported (1976-77) to roughly 25 percent of this group (1982-83).

   Both minority and white students appear, though, to be receiving aid consistent with their overall rate of application.

   The data permits no racial comparison regarding such additional points of potential interest as (1) comparative rates of application to enrollment; (2) comparative aid package offers; and (3) comparative percentages of need officially met.

Tables IC 1 and 2

3. Women have consistently, over time, represented approximately 54 to 55 percent of the needy undergraduate aid applicant pool reported.

   Both male and female students appear to be receiving aid consistent with their overall rate of application.

   The data permits no by sex comparison regarding such additional points of potential interest as (1) comparative rates of application to enrollment, (2) comparative aid package offers, and (3) comparative percentages of need officially met.

Table ID

4. Both the number and percentage of needy undergraduate aid applicants who are reported as "independent" or "self-supporting" students have increased during the eight-year history of this survey.

Their number has increased from 41,800 (1976-77) to 62,204 (1982-83) which now represents about 35 percent of the total needy undergraduate aid applicants being reported.

As might be expected, the greatest concentration of needy independent aid applicants is found in the community college sector where they represent approximately 59 percent of the total reported.

Table IE

5. While their numbers have increased, the percentage of needy undergraduate aid applicants who are reported to be "out-of-state" (four-year schools) or "out-of-district" (two-year schools) residents has remained consistent over time at about 12 to 13 percent of the total.

The percentage concentration of such students at public two-year community colleges has grown from 19-22 percent between 1976-77 and 1982-83, whereas their percentage concentration at public four-year colleges (8 to 7 percent) and independent colleges (19 to 15 percent) has declined over this same period.

Table IF

6. Parttime students have increased both in numbers (15,125 to 28,566) and in the percent of the total needy undergraduate aid applicant population (12 to 16 percent) which they represent over the six-year span of this survey during which such data have been collected.

The largest concentration of such students is found in the public two-year community college sector.

Total Undergraduate Aid Dollars

Table IIA

7. The $494,635,598 in undergraduate student aid reported for 1982-83 represents an increase of about 210 percent over the $159,470,000 in undergraduate student assistance reported in 1974-75.

Over the same eight-year time span, FTE enrollments increased roughly 13 percent and the number of needy undergraduate aid applicants rose 87 percent.

Between 1980-81 and 1982-83, however, FTE enrollments rose about 1 percent, needy undergraduate aid applicants rose roughly 8 percent and the amount of student aid increased about 6 percent. These more recent statistics document the "leveling off" that is beginning to take place with regard to student financial aid.

Table IIB

8. For 1982-83 roughly 80 percent of the total undergraduate student aid available was distributed on the basis of demonstrated need.

Making longitudinal comparisons here is difficult because of the shifting federal eligibility criteria under the Guaranteed and State Direct Student Loan Programs. Prior to 1978, this major program carried a need consideration. With the Middle Income Student Assistance Act of 1978, it became nonneed in orientation and then with the Budget Reconciliation Act of 1981, it again reverted to a need orientation. Thus, the major shifts in need and nonneed aid dollar concentration over time is probably more a function of federal policy than it is institutional prerogatives.

Need Based Undergraduate Student Aid Dollars

Table IIC

9. For 1982-83 roughly a third of the need based undergraduate student aid dollars available came from the federal government and the private community (including commercial lender GSLs). Remaining resources came from the state (19 percent--including bond funded State Direct Student Loands) and the schools themselves (14 percent - including state general fund dollars schools chose to use for undergraduate aid purposes).

Generally speaking, public two-year community colleges appear to be substantially more reliant upon federal programs than do the other higher education sectors.

Making such a distribution of funds by source is always very difficult because there are valid differences of opinion as to where certain key programs should be placed. Federal summaries, for example, typically include all Guaranteed and State Direct Loans under their umbrella because they "guarantee" the loans involved. Here, however, (1) Guaranteed Loans are placed under the "private funds" heading as commercial lenders actually provide the funds involved and (2) State Direct Student Loans are found under the "state funds" heading as the state raises the capital involved. Also state general fund dollars utilized by schools for student aid purposes are included under the "institutional funds" heading as campus aid personnel responsible for completing these surveys felt strongly that such state dollars could not be realistically tracked and isolated once they reached the campus.

Longitudinal comparisons, again, are difficult due to the reintroduction of Guaranteed and State Direct Loans into the need based category for 1982-83 (see Table IIB discussion).

Table IID

10. For 1982-83, the largest portion of need based undergraduate student aid came in the form of loans ($185,257,528 = 47 percent total). Forth-one percent ($162,722,135) came in the form of scholarships and grants and 12 percent ($47,398,514) in the form of wages.

    Longitudinal comparisons are difficult here also due to the reintroduction of Guaranteed and State Direct Loans into the need based category for 1982-83 (see Table IIB discussion).

Table IIE 1-4

11. Given the analysis constraints noted earlier (see discussion regarding Tables IIB and IIC), it appears that the federal government is generally the largest supplier of need based grants, the private community is the largest supplier of need based loans, and schools themselves are the largest supplier of need based work opportunities.

Nonneed Based Undergraduate Student Aid Dollars

Table IIF

12. For 1982-83, the largest amount of nonneed based undergraduate student aid ($51,635,992 = 52 percent of total) came in the form of employment opportunities. Academic merit ($20,031,002) and other skill ($18,958,107) awards were next with 20 percent and 19 percent of the nonneed total respectively. Athletic awards ($8,479,390) accounted for only about 9 percent of this total. Without the inclusion of Guaranteed and State Direct Loans (as had been the case for 1980-81) student loans represented an insignificant portion of the total nonneed based student aid awarded for 1982-83.

There is concern in some circles regarding the continued increase of nonneed based academic ability and skill awards. However, it is important to note that student employment is still by far the largest category of nonneed aid.

It is also important to note that at least some 33 percent of all nonneed undergraduate student aid actually goes to help meet financial need that has been formally demonstrated in application for other programs of assistance.

Unmet Undergraduate Student Need Reported

Table IIIA

13. The total amount of unmet undergraduate financial need reported has increased from $31,270,000 in 1974-75 to $77,851,959 in 1982-83. This represents an increase of about 149 percent over this eight-year span.

Tables IA, IIA and IIIA

14. If enrollments, needy students, total aid and unmet need are compared over time, the following summary can be created:

Undergraduate Category	1974-75 to 1982-83 (Eight-Year Percent Change)	1980-81 to 1982-83 (Two-Year Percent Change)
Total FTE Enrollment	+13%	+1%
Total Needy Students	+87%	+8%
Total Aid Distributed	+210%	+6%
Total Unmet Need	+149%	+7%

Table IIIA

15. The average per needy student unmet need figure has increased from $330 in 1974-75 to $439 in 1982-83. This change represents an increase of about 33 percent.

As might be expected, due to their higher costs, this average unmet need figure is most pronounced in the private college sector.

Table IIIB

16. Schools seem to be adopting a policy of meeting less than full need to help spread aid dollars among a greater number of needy applicants.

This practice appears to be most prevalent among public two-year community colleges and private colleges.

Undergraduate Campus Student Aid Personnel and Administrative Costs

Table IVA

17. Reported campus undergraduate aid administrative costs appear to be running 3-4 percent of the total aid dollars distributed.

Reported administrative costs actually dropped about $2.5 million between 1980-81 and 1982-83, but have increased a total of roughly 227 percent between 1974-75 and 1982-83.

It must be kept in mind that these campus cost figures are also inevitably incomplete as some functions are performed by the federal government, state agencies, private collection agencies, etc.

Table IVB

18. Total FTE campus aid personnel dealing with the delivery of undergraduate student aid services has increased from 631 in 1976-77 to 1,021 in 1982-83. This represents an overall staff increase of 62 percent.

Individual Need Based Undergraduate Program Summary

Table IIIC

19. The number of students receiving scholarships and grants (136,924) still exceeds the number borrowing (89,356), but loan participation has increased more rapidly than any other student aid sector.

Table VA-E

20. Approximately 50 percent of the public two-year community college campus based (NDSL, SEOG and CWS) resources go to independent students. In the other school sectors, typically 30 percent or less of these funds goes to independent students.

Table VA-E

21. Public four-year schools receive the majority of all campus based aid (NDSL, SEOG, CWS) but split Pell awards and funds more evenly with the other sectors.

Table VA-E

22. Campus based awards (NDSL, SEOG, CWS) are focused upon the lowest dependent student family income groups in the public two-year community college sector.

    This factor is probably due at least in part to their lower costs and thus the lower resource picture needed to demonstrate need and qualify for aid.

Table VA-E

23. Private colleges make the smallest share of the combined campus-based (NDSL, SEOG, CWS) and Pell awards.

INTRODUCTION TO 1982-83 UNDERGRADUATE STUDENT FINANCIAL AID SURVEY

The following tables summarize data obtained from the 1982-83 Undergraduate Student Aid Survey that was conducted by the State of Michigan's Student Financial Aid Programs, in conjunction with the Michigan Student Financial Aid Association. Comparison data from earlier surveys are also provided where applicable.

The survey data reported each year reflect information on all active Michigan colleges and universities having undergraduate enrollments for the period in question with the following exceptions:

1. Original 1974-75 HR-11 Legislative Study--no missing schools.
2. 1976-77 Michigan Department of Education Study--missing West Shore Community College, Faithway Baptist College, General Motors Institute and Jordan College.
3. 1978-79 Michigan Department of Education Study--missing General Motors Institute, Merrill Palmer Institute and Walsh College.
4. 1980-81 Michigan Department of Education Study--missing Great Lakes Bible College and General Motors Institute.
5. 1982-83 Michigan Department of Education Study--missing Center for Humanistic Studies, Chapin J.C., Chrysler Institute, Great Lakes Bible College, Reformed Bible College, Sacred Heart and Shaw Colleges.

Both the 1976-77 and the 1978-79 Michigan Department of Education studies were completed by a total of 86 responding institutions. The 1980-81 survey was completed by a total of 85 schools. The 1982-83 survey was completed by 84 schools.

I. DESCRIPTION OF NEEDY UNDERGRADUATE AID APPLICANT POPULATION SERVED:

A. TOTAL NEEDY* UNDERGRADUATE APPLICANTS:

School Category	FULLTIME EQUATED (FTE) UNDERGRADUATE ENROLLMENT**					NEEDY* UNDERGRADUATE ENROLLMENT										% Needy Enrollment to FTE Change Between 1980-81 & 1982-83
						Number					Percent FTE					
	1974-75	1976-77	1978-79	1980-81	1982-83	1974-75	1976-77	1978-79	1980-81	1982-83	1974-75	1976-77	1978-79	1980-81	1982-83	
Public Two-Year	91,752	82,425	94,841	105,663	115,214	19,880	40,642	30,207	52,190	50,335	22%	49%	32%	49%	44%	-5%
Public Four-Yea	150,568	157,660	157,490	167,936	156,990	56,110	60,403	67,127	82,840	95,004	37%	38%	43%	49%	61%	+12%
Private	42,025	41,465	42,688	45,235	47,796	18,750	24,751	24,378	29,156	32,202	45%	60%	57%	64%	67%	+3%
TOTAL	284,345	281,550	295,019	318,834	320,000	94,740	125,796	121,712	164,186	177,541	33%	45%	42%	51%	55%	+4%

*"Needy" defined as individuals having filed a financial statement which indicated an "expected family contribution" that was lower than the campus student expense budget in question (Cost - Family Contribution = Need).

**Data drawn from survey forms, but instructions indicate that it should be based upon HEGIS information previously filed for the year in question.

B 1. RACIAL MIX OF NEEDY UNDERGRADUATE AID APPLICANTS:

Racial Category	SCHOOL TYPE						Total*	
	Public Two-Year		Public Four-Year		Private			
	Number	%	Number	%	Number	%	Number	%
1974-75		NO DATA AVAILABLE						
White								
Nonwhite								
TOTAL*								
1976-77								
White	21,859	54%	47,897	79%	17,415	74%	81,171	70%
Nonwhite	18,783	46%	12,506	21%	6,159	26%	37,448	30%
TOTAL*	40,642	100%	60,403	100%	23,574	100%	124,619	100%
1978-79								
White	19,105	63%	47,492	78%	17,950	76%	84,547	74%
Nonwhite	10,912	37%	13,554	22%	5,593	24%	30,059	26%
TOTAL*	30,017	100%	61,046	100%	23,543	100%	114,606	100%
1980-81								
White	31,621	61%	65,764	79%	22,082	76%	119,467	73%
Nonwhite	20,569	39%	17,076	21%	7,074	24%	44,719	27%
TOTAL*	52,190	100%	32,840	100%	29,156	100%	164,186	100%
1982-83								
White	28,786	57%	79,298	83%	22,145	77%	130,229	75%
Nonwhite	21,395	43%	15,706	17%	6,552	23%	43,653	25%
TOTAL*	50,181	100%	95,004	100%	28,697	100%	173,882	100%

*Totals may differ slightly from other tables because not all respondents completed this section of the survey form.

B 2. RACIAL MIX OF NEEDY UNDERGRADUATE AID RECIPIENTS:

The 1978-79 through 1982-83 surveys also included a question regarding the racial mix of needy aid recipients.

Racial Category	SCHOOL TYPE						Total*	
	Public Two-Year		Public Four-Year		Private			
	Number	%	Number	%	Number	%	Number	%
1974-75 and 1976-77								
White	NO DATA AVAILABLE							
Nonwhite								
TOTAL*								
1978-79								
White	18,587	63%	46,310	77%	17,725	78%	82,622	74%
Nonwhite	10,671	37%	13,519	23%	5,131	22%	29,321	26%
TOTAL*	29,258	100%	59,829	100%	22,856	100%	111,943	100%
1980-81								
White	30,181	61%	62,603	79%	21,785	76%	114,569	73%
Nonwhite	19,589	39%	16,384	21%	7,025	24%	42,998	27%
TOTAL*	49,770	100%	78,987	100%	28,810	100%	157,567	100%
1982-83								
White	29,406	59%	75,059	83%	22,000	77%	126,465	75%
nwhite	20,681	41%	14,920	17%	6,432	23%	42,033	25%
OTAL*	50,087	100%	89,979	100%	28,432	100%	168,498	100%

*Totals may differ slightly from other tables because not all respondents completed this section of the survey form.

A comparison of the information in Tables I B 1 and I B 2 tends to show that there are no "sizable" changes in the mix of needy "applicants" and "recipients" being reported for any given year studied. Thus, both minority and white applicants appear to be obtaining aid funds consistent with their overall rate of application.

C 1. SEX DISTRIBUTION OF NEEDY UNDERGRADUATE APPLICANTS:

Sex Category	SCHOOL TYPE						Total*	
	Public Two-Year		Public Four-Year		Private			
	Number	%	Number	%	Number	%	Number	%
1974-75								
Male			NO DATA AVAILABLE					
Female								
TOTAL*								
1976-77								
Male	14,972	37%	29,433	49%	11,456	49%	55,861	45%
Female	25,670	63%	30,970	51%	12,118	51%	68,758	55%
TOTAL*	40,642	100%	60,403	100%	23,574	100%	124,619	100%
1978-79								
Male	12,142	40%	31,472	48%	11,413	48%	55,027	46%
Female	18,065	60%	33,481	52%	12,554	52%	64,100	54%
TOTAL*	30,207	100%	64,953	100%	23,967	100%	119,127	100%
1980-81								
Male	21,605	41%	41,748	50%	13,005	45%	76,358	46%
Female	30,583	59%	41,094	50%	16,151	55%	87,828	54%
TOTAL*	52,188	100%	82,842	100%	29,156	100%	164,186	100%
1982-83								
Male	18,844	37%	47,598	50%	14,335	49%	80,777	46%
Female	31,491	63%	47,406	50%	14,980	51%	93,877	54%
TOTAL*	50,335	100%	95,004	100%	29,315	100%	174,654	100%

*Totals may differ slightly from other tables because not all respondents completed this section of the survey form.

C 2. SEX DISTRIBUTION OF NEEDY UNDERGRADUATE AID RECIPIENTS:

The 1978-79 through 1982-83 surveys also included a question regarding the sex mix of needy aid recipients.

Sex Category	SCHOOL TYPE						Total*	
	Public Two-Year		Public Four-Year		Private			
	Number	%	Number	%	Number	%	Number	%
1974-75 & 1976-77								
Male	NO DATA AVAILABLE							
Female								
TOTAL*								
1978-79								
Male	11,853	40%	30,608	48%	11,324	49%	53,785	46%
Female	17,593	60%	32,726	52%	11,947	51%	62,266	54%
TOTAL*	29,446	100%	63,334	100%	23,271	100%	116,051	100%
1980-81								
Male	20,540	41%	39,695	50%	12,810	45%	73,045	46%
Female	29,228	59%	39,292	50%	15,915	55%	84,435	54%
TOTAL*	49,768	100%	78,987	100%	28,725	100%	157,480	100%
1982-83								
Male	19,157	38%	45,074	50%	14,273	49%	78,504	46%
emale	31,629	62%	44,905	50%	14,777	51%	91,311	54%
TOTAL*	50,786	100%	89,979	100%	29,050	100%	169,815	100%

*Totals may differ slightly from other tables because not all respondents completed this section of the survey form.

A comparison of the information in Tables I C 1 and I C 2 tends to show that there are no "sizeable" changes in the mix of needy "applicants" and "recipients" being reported for any given year studied. Thus, male and female applicants both appear to be obtaining aid funds consistent with their overall rate of application.

D. DEPENDENCY DISTRIBUTION OF NEEDY UNDERGRADUATE AID APPLICANTS:

Student Aid Filing Status	SCHOOL TYPE						Total*	
	Public Two-Year		Public Four-Year		Private			
	Number	%	Number	%	Number	%	Number	%
1974-75								
Dependent			NO DATA AVAILABLE					
Independent								
TOTAL*								
1976-77								
Dependent	17,566	43%	46,407	77%	18,846	80%	82,819	67%
Independent	23,076	57%	13,996	23%	4,728	20%	41,800	33%
TOTAL*	40,642	100%	60,403	100%	23,574	100%	124,619	100%
1978-79								
Dependent	15,396	57%	50,768	76%	19,040	79%	85,204	70%
Independent	14,811	43%	16,359	24%	5,163	21%	36,333	30%
TOTAL*	30,207	100%	67,127	100%	24,203	100%	121,537	100%
1980-81								
Dependent	24,315	47%	60,707	73%	22,448	77%	107,470	65%
Independent	27,875	53%	22,133	27%	6,708	23%	56,716	35%
TOTAL*	52,190	100%	82,840	100%	29,156	100%	164,186	100%
1982								
Dependent	20,526	41%	70,677	74%	23,067	74%	114,270	65%
Independent	29,809	59%	24,327	26%	8,068	26%	62,204	35%
TOTAL*	50,335	100%	95,004	100%	31,135	100%	176,474	100%

*Totals may differ from other tables because not all respondents completed this section of the survey form.

RESIDENCY DISTRIBUTION OF NEEDY UNDERGRADUATE AID APPLICANTS:

Student Residency Status	SCHOOL TYPE						Total*	
	Public Two-Year		Public Four-Year		Private			
	Number	%	Number	%	Number	%	Number	%
1974-75								
InState/Dist.								
OutState/Dist.			NO DATA AVAILABLE					
TOTAL*								
1976-77								
InState/Dist.	32,527	81%	55,532	92%	19,108	81%	107,167	87%
Outstate/Dist.	7,393	19%	4,871	8%	4,466	19%	16,730	12%
TOTAL*	39,920	100%	60,403	100%	23,574	100%	123,897	100%
1978-79								
InState/Dist.	25,015	83%	61,781	92%	19,635	81%	106,431	88%
OutState/Dist.	5,192	17%	5,346	8%	4,568	19%	15,106	12%
TOTAL*	30,207	100%	67,127	100%	24,203	100%	121,537	100%
1980-81								
InState/Dist.	41,836	80%	76,725	92%	24,913	85%	143,474	87%
Outstate/Dist.	10,354	20%	6,115	8%	4,243	15%	20,712	13%
TOTAL*	52,190	100%	82,840	100%	29,156	100%	164,186	100%
1982-83								
InState/Dist.	38,761	78%	87,919	93%	24,804	85%	151,484	87%
OutState/Dist.	10,980	22%	7,085	7%	4,511	15%	22,576	13%
TOTAL*	49,741	100%	95,004	100%	29,315	100%	174,060	100%

*Totals may differ from other tables because not all respondents completed this section of the survey form.

F. ENROLLMENT DISTRIBUTION OF NEEDY UNDERGRADUATE AID APPLICANTS:

Student Applicant Enrollment Status	SCHOOL TYPE						Total*	
	Public Two-Year		Public Four-Year		Private			
	Number	%	Number	%	Number	%	Number	%
1974-75								
Fulltime								
Parttime			NO DATA AVAILABLE					
TOTAL*								
1976-77								
Fulltime	29,542	74%	57,540	95%	21,690	92%	108,772	88%
Parttime	10,378	26%	2,863	5%	1,884	8%	15,125	12%
TOTAL*	39,920	100%	60,403	100%	23,574	100%	123,897	100%
1978-79								
Fulltime	19,887	66%	60,421	90%	21,481	89%	101,789	84%
Parttime	10,320	34%	6,706	10%	2,722	11%	19,748	16%
TOTAL*	30,207	100%	67,127	100%	24,203	100%	121,537	100%
1980-81								
Fulltime	33,806	65%	77,346	93%	25,377	87%	136,489	83%
Parttime	18,384	35%	5,494	7%	3,819	13%	27,697	17%
TOTAL*	52,190	100%	82,840	100%	29,156	100%	164,186	100%
1982-83								
Fulltime	34,143	68%	86,354	91%	27,411	88%	147,908	84%
Halftime	14,695	29%	7,573	8%	3,307	11%	25,575	14%
Less than Halftime	1,497	3%	1,077	1%	417	1%	2,991	2%
TOTAL*	50,335	100%	95,004	100%	31,135	100%	176,474	100%

*Totals may differ from other tables because not all respondents completed this section of the survey form.

II. TOTAL UNDERGRADUATE AID DOLLARS DISTRIBUTED:

A. CHANGE IN OVERALL NUMBER OF UNDERGRADUATE STUDENTS AND AID DOLLARS OVER TIME:

School Type	Total FTE Undergraduate Students									Total Needy Undergraduate Students								
						Percent Change									Percent Change			
	1974-75	1976-77	1978-79	1980-81	1982-83	74-75 to 76-77	76-77 to 78-79	78-79 to 80-81	80-81 to 82-83	1974-75	1976-77	1978-79	1980-81	1982-83	74-75 to 76-77	76-77 to 78-79	78-79 to 80-81	80-81 to 82-83
Public 2-Year	91,752	82,425	94,841	105,663	115,214	-10%	+15%	+11%	+9%	19,880	40,642	3[illegible]07	52,190	50,335	+104%	-25%	+73%	-4%
Public 4-Year	150,568	157,660	157,490	167,936	156,990	+ 5%	0%	+ 7%	-6%	56,110	60,403	67,127	82,840	95,004	+ 8%	+11%	+23%	+15%
Private	42,025	41,465	42,688	45,235	47,796	+ 1%	+ 3%	+ 6%	+6%	18,750	24,751	24,378	29,156	32,202	+ 32%	- 2%	+20%	+10%
TOTAL	284,345	281,550	295,019	318,834	320,000	- 1%	+ 5%	+ 8%	+1%	94,740	125,796	121,712	164,186	177,541	+ 33%	- 3%	+34%	+ 8%

School Type	Total Undergraduate (Need & NonNeed) Aid Dollars Dist.					Percent Change			
	1974-75	1976-77	1978-79	1980-81	1982-83	74-75 to 76-77	76-77 to 78-79	78-79 to 80-81	80-81 to 82-83
Public 2-Year	$ 21,690,000	$ 34,297,164	$ 32,736,826	$ 53,507,317	$ 66,293,598	+58%	- 5%	+63%	24%
Public 4-Year	98,380,000	119,224,277	157,644,434	295,560,189	306,379,203	+21%	+32%	+87%	+ 4%
Private	39,400,000	53,922,164	66,751,210	116,152,368	121,962,797	+37%	+23%	+74%	+ 5%
TOTAL	$159,470,000	$207,443,605	$257,132,470	$465,219,874	$494,635,598	+30%	+24%	+80%	+ 6%

B. UNDERGRADUATE AID DOLLARS BY BASIS OF DISTRIBUTION:

Year and School Type	TOTAL AID DOLLARS DISTRIBUTED					
	Need-Based		Nonneed-Based		Total	
	Dollars	%	Dollars	%	Dollars	%
1974-75						
Public 2-Year						
Public 4-Year		NO DATA AVAILABLE				
Private						
TOTAL						
1976-77						
Public 2-Year	$ 30,037,236	88%	$ 4,259,928	12%	$ 34,297,164	100%
Public 4-Year	77,818,592	65%	41,405,685	35%	119,224,277	100%
Private	46,876,946	87%	7,045,218	13%	53,922,164	100%
TOTAL	$154,732,774	75%	$ 52,710,831	25%	$207,443,605	100%
1978-79						
Public 2-Year	$ 25,608,673	78%	$ 7,128,153	22%	$ 32,736,826	100%
Public 4-Year	83,991,173	53%	73,653,261	47%	157,644,434	100%
Private	50,685,538	76%	16,065,672	24%	66,751,210	100%
TOTAL	$160,285,384	62%	$ 96,847,086	38%	$257,132,470	100%
1980-81						
Public 2-Year	$ 37,075,586	69%	$ 16,431,731	31%	$ 53,507,317	100%
Public 4-Year	108,891,592	37%	186,668,597	63%	295,560,189	100%
Private	71,285,207	61%	44,867,161	39%	116,152,368	100%
TOTAL	$217,252,385	47%	$247,967,489	53%	$465,219,874	100%
1982-83						
Public 2-Year	$ 56,094,626	85%	$ 10,198,972	15%	$ 66,293,598	100%
Public 4-Year	243,511,271	79%	62,867,932	21%	306,379,203	100%
Private	95,772,280	79%	26,190,517	21%	121,962,797	100%
TOTAL	$395,378,177	80%	$ 99,257,421	20%	$494,635,598	100%

C. UNDERGRADUATE NEED-BASED AID DOLLARS BY SOURCE OF FUNDS INVOLVED:

YEAR AND SCHOOL TYPE	FEDERAL FUNDS			STATE FUNDS			INSTITUTIONAL FUNDS** (GEN. & RESTRICTED)			PRIVATE FUNDS			TOTAL* NEED-BASED FUNDS		
	Dollars	Row %	Col %	Dollars	Row %	Col %	Dollars	Row %	Col %	Dollars	Row %	Col %	Dollars	Row %	Col %
1974-75				NO DATA AVAILABLE											
Pub. 2-Yr.															
Pub. 4-Yr.															
Private															
TOTAL*															
1976-77															
Pub. 2-Yr.	$ 26,756,879	89%	29%	$ 1,054,304	4%	4%	$ 1,486,503	5%	5%	$ 737,682	2%	12%	$ 30,035,368	100%	19%
Pub. 4-Yr.	45,516,754	58%	50%	9,435,077	12%	37%	19,130,112	25%	62%	3,736,649	5%	60%	77,818,592	100%	50%
Private	19,682,328	43%	21%	15,157,430	32%	59%	10,292,088	22%	33%	1,745,599	3%	28%	46,877,445	100%	31%
TOTAL*	$ 91,955,961	59%	100%	$25,646,811	17%	100%	$ 30,908,703	20%	100%	$ 6,219,930	4%	100%	$154,731,405	100%	100%
1978-79															
Pub. 2-Yr.	$ 20,036,843	78%	22%	$ 1,963,479	8%	6%	$ 2,852,573	11%	9%	$ 755,778	3%	10%	$ 25,608,673	100%	16%
Pub. 4-Yr.	49,040,130	58%	55%	12,594,381	15%	38%	17,489,398	21%	59%	4,867,264	6%	65%	83,991,173	100%	52%
Private	20,414,770	40%	23%	18,752,800	37%	56%	9,596,754	19%	32%	1,921,214	4%	25%	50,685,538	100%	32%
TOTAL*	$ 89,491,743	56%	100%	$33,310,660	21%	100%	$ 29,938,725	19%	100%	$ 7,544,256	4%	100%	$160,285,384	100%	100%
1980-81															
Pub. 2-Yr.	$ 32,794,368	89%	25%	$ 704,298	2%	2%	$ 3,132,896	8%	6%	$ 444,024	1%	15%	$ 37,075,586	100%	17%
Pub. 4-Yr	69,605,488	64%	52%	12,121,662	11%	42%	25,587,040	24%	49%	1,577,402	1%	51%	108,891,592	100%	50%
Private	30,896,709	43%	23%	16,241,949	23%	56%	23,109,599	32%	45%	1,036,950	2%	34%	71,285,207	100%	33%
TOTAL*	$133,296,565	61%	100%	$29,067,909	13%	100%	$ 51,029,535	24%	100%	$ 3,058,376	2%	100%	$217,252,385	100%	100%
1982-83															
Pub. 2-Yr.	$ 32,890,386	59%	26%	$ 3,364,024	6%	4%	$ 2,868,358	5%	5%	$16,971,858	30%	12%	$ 56,094,626	100%	14%
Pub. 4-Yr.	68,936,658	28%	53%	43,834,874	18%	58%	35,223,396	15%	65%	95,516,343	39%	70%	24,354,271	100%	62%
Private	27,049,003	28%	21%	28,690,646	30%	38%	16,071,751	17%	30%	23,960,880	25%	18%	95,772,280	100%	24%
TOTAL*	$128,876,047	33%	100%	$75,889,544	19%	100%	$ 54,146,505	14%	100%	$136,449,081	34%	100%	$395,378,177	100%	100%

*Totals may differ from other tables, as not all respondents completed this section of the survey form.

** For reporting convenience includes state general fund dollars which were utilized for student financial aid purposes. Separate Department of Management and Budget reports indicate that the total general fund dollars used for student aid (all levels) is roughly $40,000,000 per year.

D. UNDERGRADUATE NEED-BASED DOLLARS BY AID TYPE:

YEAR AND SCHOOL TYPE	SCHOLARSHIP/GRANT			LOAN			WORK			TOTAL*		
	Dollars	Row %	Col. %	Dollars	Row %	Col. %	Dollars	Row %	Col. %	Dollars	Row %	Col. %
1974-75												
Pub. 2-Yr.												
Pub. 4-Yr.				NO DATA AVAILABLE								
Private												
TOTAL*												
1976-77												
Pub. 2-Yr.	$ 23,687,376	79%	22%	$ 2,785,063	9%	11%	$ 3,562,929	12%	18%	$ 30,035,368	100%	19%
Pub. 4-Yr.	51,782,531	67%	47%	16,306,022	21%	65%	9,730,039	12%	49%	77,818,592	100%	50%
Private	34,551,369	74%	31%	5,947,484	13%	24%	6,378,592	13%	33%	46,877,445	100%	31%
TOTAL*	$110,021,276	71%	100%	$ 25,038,569	16%	100%	19,671,560	13%	100%	$154,731,405	100%	100%
1978-79												
Pub. 2-Yr.	$ 17,741,877	69%	16%	$ 3,569,256	14%	13%	$ 4,297,540	17%	23%	$ 25,608,673	100%	16%
Pub. 4-Yr.	56,672,869	67%	50%	18,305,073	22%	65%	9,013,231	11%	47%	83,991,173	100%	52%
Private	38,777,352	77%	34%	6,251,032	12%	22%	5,657,154	11%	30%	50,685,538	100%	32%
TOTAL*	$113,192,098	71%	100%	$ 28,125,361	17%	100%	$ 18,967,925	12%	100%	$160,285,384	100%	100%
1980-81												
Pub. 2-Yr.	$ 29,821,406	80%	19%	$ 2,182,466	6%	9%	$ 5,071,714	14%	16%	$ 37,075,586	100%	17%
Pub. 4-Yr.	75,817,171	70%	47%	$ 15,813,059	15%	65%	17,261,362	15%	53%	108,891,592	100%	50%
Private	54,601,251	77%	34%	6,476,962	9%	26%	10,206,994	14%	31%	71,285,207	100%	33%
TOTAL*	$160,239,828	74%	100%	$ 24,472,487	11%	100%	$ 32,540,070	15%	100%	$217,252,385	100%	100%
1982-83												
Pub. 2-Yr.	$ 30,671,456	55%	19%	$ 15,551,775	28%	8%	$ 9,871,395	17%	21%	$ 56,094,626	100%	14%
Pub. 4-Yr.	81,609,686	33%	50%	132,902,691	55%	72%	28,998,894	12%	61%	243,511,271	100%	62%
Private	50,440,993	53%	31%	36,803,062	38%	20%	8,528,225	9%	18%	95,772,280	100%	24%
TOTAL*	$162,722,135	41%	100%	$185,257,528	47%	100%	$ 47,398,514	12%	100%	$395,378,177	100%	100%

*Totals may differ from other tables, as not all respondents completed this section of the survey.

E. STRIBUTION OF NEED-BASED DOLLARS BY TYPE AND SOU :

1. PUBLIC TWO-YEAR SCHOOLS:

YEAR AND SCHOOL TYPE	SCHOLARSHIP/GRANT			LOAN			WORK			TOTAL*		
	Dollars	Row %	Col. %	Dollars	Row %	Col. %	Dollars	Row %	Col. %	Dollars	Row %	Col. %
1974-75												
Federal												
State				NO DATA AVAILABLE								
Institutional												
Private												
TOTAL*												
1976-77												
Federal	$20,002,946	82%	93%	$ 2,051,274	8%	74%	$ 2,702,659	10%	76%	$26,756,879	100%	89%
State	887,022	82%	4%	165,773	16%	6%	21,509	2%	1%	1,054,304	100%	4%
Institutional (Gen./Restric)	525,570	35%	2%	241,234	16%	9%	719,699	49%	20%	1,486,503	100%	5%
Private	291,838	40%	1%	326,782	44%	11%	119,062	16%	3%	737,682	100%	2%
TOTAL*	$23,687,376	79%	100%	$ 2,785,063	9%	100%	$ 3,562,929	12%	100%	$30,035,368	100%	100%
1978-79												
Federal	$16,123,423	80%	91%	$ 1,503,975	8%	42%	$ 2,409,445	12%	56%	$20,036,843	100%	78%
State	827,969	42%	5%	1,135,510	58%	32%	-0-	0%	0%	1,963,479	100%	8%
Institutional (Gen./Restric)	534,907	20%	3%	438,559	16%	12%	1,879,107	64%	44%	2,852,573	100%	11%
Private	255,578	34%	1%	491,212	65%	14%	8,988	1%	0%	755,778	100%	3%
TOTAL*	$17,741,877	69%	100%	$ 3,569,256	14%	100%	$ 4,297,540	17%	100%	$25,608,673	100%	100%
1980-81												
Federal	$27,870,897	85%	94%	$ 1,866,949	6%	86%	$ 3,056,522	9%	60%	$32,794,368	100%	88%
State	688,798	98%	2%	15,500	2%	1%	-0-	0%	0%	704,298	100%	2%
Instructional (Gen./Restric)	860,354	27%	3%	300,017	10%	13%	1,972,525	63%	39%	3,132,896	100%	9%
Private	401,357	90%	1%	-0-	0%	0%	42,667	10%	1%	444,024	100%	1%
TOTAL*	$29,821,406	80%	100%	$ 2,182,466	6%	100%	$ 5,071,714	14%	100%	$37,075,586	100%	100%
1982-83												
Federal	$29,132,260	89%	95%	$ 900,033	3%	6%	$ 2,858,093	8%	29%	$32,890,386	100%	59%
State	691,819	21%	2%	2,425,652	72%	16%	246,553	7%	2%	3,364,024	100%	6%
Institutional (Gen./Restric)	502,156	18%	2%	332,974	12%	2%	2,033,228	70%	21%	2,868,358	100%	5%
Private	345,221	2%	1%	11,893,116	70%	76%	4,733,521	28%	48%	16,971,858	100%	30%
TOTAL*	$30,671,456	55%	100%	$15,551,775	28%	100%	$ 9,871,395	17%	100%	$56,094,626	100%	100%

*Totals may differ from other tables, as not all respondents completed this section of the survey.

E. DISTRIBUTION OF NEED-BASED DOLLARS BY TYPE AND SOURCE:

2. PUBLIC FOUR-YEAR SCHOOLS:

YEAR AND SCHOOL TYPE	SCHOLARSHIP/GRANT			LOAN			WORK			TOTAL*		
	Dollars	Row %	Col. %	Dollars	Row %	Col. %	Dollars	Row %	Col. %	Dollars	Row %	Col. %
1974-75												
Federal												
State												
Institutional (Gen./Restric)			NO DATA AVAILABLE									
Private												
TOTAL*												
1976-77												
Federal	$28,489,121	63%	55%	$10,051,943	22%	62%	$ 6,975,690	15%	72%	$ 45,516,754	100%	58%
State	8,839,246	94%	17%	574,304	6%	4%	21,527	0%	0%	9,435,077	100%	12%
Institutional (Gen./Restric)	13,082,644	68%	25%	3,563,445	19%	22%	2,484,023	13%	26%	19,130,112	100%	25%
Private	1,371,520	37%	3%	2,116,330	57%	12%	248,799	6%	2%	3,736,649	100%	5%
TOTAL*	$51,782,531	67%	100%	$16,306,022	21%	100%	$ 9,730,039	12%	100%	77,818,592	100%	100%
1978-79												
Federal	$30,390,881	62%	54%	$11,657,299	24%	64%	$ 6,991,950	14%	78%	$ 49,040,130	100%	58%
State	11,122,050	88%	20%	1,450,731	12%	8%	21,600	0%	0%	12,594,381	100%	15%
Institutional (Gen./Restric)	13,899,633	80%	24%	1,780,846	10%	10%	$ 1,808,919	10%	20%	17,489,398	100%	21%
Private	1,260,305	26%	2%	3,416,197	70%	18%	190,762	4%	2%	4,867,264	100%	6%
TOTAL*	$56,672,869	67%	100%	$18,305,073	22%	100%	$ 9,013,231	11%	100%	$ 83,991,173	100%	100%
1980-81												
Federal	$47,273,284	68%	62%	$13,642,702	20%	86%	$ 8,689,502	12%	51%	$ 69,605,488	100%	64%
State	12,039,684	99%	16%	61,990	1%	0%	19,988	0%	0%	12,121,662	100%	11%
Institutional (Gen./Restric)	15,165,771	60%	20%	2,108,367	8%	14%	8,312,902	22%	48%	25,587,040	100%	23%
Private	1,338,432	85%	2%	-0-	0%	0%	238,970	15%	1%	1,577,402	100%	2%
TOTAL*	$75,817,171	70%	100%	$15,813,059	15%	100%	$17,261,362	15%	100%	$108,891,592	100%	100%
1982-83												
Federal	$46,867,336	68%	58%	$13,307,411	19%	10%	$ 8,761,911	13%	30%	$ 68,936,658	100%	28%
State	11,675,129	27%	14%	32,141,365	73%	24%	18,380	0%	0%	43,834,874	100%	18%
Institutional (Gen./Restric)	21,279,450	60%	26%	1,316,834	4%	1%	12,627,112	36%	44%	35,223,396	100%	14%
Private	1,787,771	2%	2%	86,137,081	90%	65%	7,591,491	8%	26%	95,516,343	100%	40%
TOTAL*	$81,609,686	34%	100%	$132,902,691	54%	100%	$28,998,894	12%	100%	$243,511,271	100%	100%

*Tot may differ from other tables, as not all respon s completed this section of the survey.

E. DISTRIBUTION OF NEED-BASED DOLLARS BY TYPE AND SOURCE:

3. PRIVATE SCHOOLS:

YEAR AND SCHOOL TYPE	SCHOLARSHIP/GRANT			LOAN			WORK			TOTAL*		
	Dollars	Row %	Col. %	Dollars	Row %	Col. %	Dollars	Row %	Col. %	Dollars	Row %	Col. %
1974-75												
Federal												
State												
Institutional			NO DATA AVAILABLE									
(Gen./Restric)												
Private												
TOTAL*												
1976-77												
Federal	$13,258,267	67%	38%	$ 3,819,497	20%	64%	$ 2,604,564	13%	41%	$19,682,328	100%	42%
State	14,648,650	97%	42%	506,026	3%	9%	2,754	0%	0%	15,157,430	100%	32%
Institutional (Gen./Restric)	5,961,949	58%	17%	986,805	10%	16%	3,343,334	32%	52%	10,292,088	100%	22%
Private	682,503	39%	3%	635,156	36%	11%	427,940	25%	7%	1,745,599	100%	4%
TOTAL*	$34,551,369	74%	100%	$ 5,947,484	13%	100%	$ 6,378,592	13%	100%	$46,877,445	100%	100%
1978-79												
Federal	$14,075,665	69%	36%	$ 3,576,868	18%	57%	$ 2,762,237	13%	49%	$20,414,770	100%	40%
State	17,560,253	94%	45%	1,192,547	6%	19%	-0-	0%	0%	18,752,800	100%	37%
Institutional (Gen./Restric)	6,604,127	69%	17%	589,396	6%	10%	2,403,231	25%	42%	9,596,754	100%	19%
Private	537,307	28%	2%	892,221	46%	14%	491,686	26%	9%	1,921,214	100%	4%
TOTAL*	$38,777,352	77%	100%	$ 6,251,032	12%	100%	$ 5,657,154	11%	100%	$50,685,538	100%	100%
1980-81												
Federal	$21,725,748	70%	40%	$ 5,460,492	18%	84%	$ 3,710,469	12%	36%	$30,896,709	100%	43%
State	16,092,820	99%	29%	149,129	1%	2%	-0-	0%	0%	16,241,949	100%	23%
Institutional (Gen./Restric)	15,868,575	69%	29%	867,341	4%	14%	6,373,683	27%	63%	23,109,599	100%	32%
Private	914,108	88%	2%	-0-	0%	0%	122,842	12%	1%	1,036,950	100%	2%
Total*	$54,601,251	77%	100%	$ 6,476,962	9%	100%	$10,206,994	14%	100%	$71,285,207	100%	100%
1982-83												
Federal	$21,084,466	78%	42%	$ 2,933,019	11%	8%	$ 3,031,518	11%	36%	$27,049,003	100%	28%
State	19,160,045	67%	38%	9,530,601	33%	26%	-0-	0%	0%	28,690,646	100%	30%
Institutional (Gen./Restric)	9,099,830	57%	18%	1,517,292	9%	4%	5,454,629	34%	64%	16,071,751	100%	17%
Private	1,096,652	5%	2%	22,822,150	95%	62%	42,078	0%	0%	23,960,880	100%	25%
TOTAL*	$50,440,993	53%	100%	$36,803,062	38%	100%	$ 8,528,225	9%	100%	$95,772,280	100%	100%

*Totals may differ from other tables, as not all respondents completed this section of the survey form.

E. DISTRIBUTION OF NEED-BASED DOLLARS BY TYPE AND SOURCE:

4. ALL SCHOOLS:

YEAR AND SCHOOL TYPE	SCHOLARSHIP/GRANT			LOAN			WORK			TOTAL*		
	Dollars	Row %	Col. %	Dollars	Row %	Col. %	Dollars	Row %	Col. %	Dollars	Row %	Col. %
1974-75												
Federal												
State												
Institutional (Gen./Restric)				NO DATA AVAILABLE								
Private												
TOTAL*												
1976-77												
Federal	$ 63,750,334	69%	58%	$ 15,922,714	17%	64%	$12,282,913	14%	63%	$ 91,955,961	100%	59%
State	24,354,918	95%	22%	1,246,103	5%	5%	45,790	0%	0%	25,646,811	100%	17%
Institutional (Gen./Restric)	19,570,163	63%	18%	4,791,484	16%	19%	6,547,056	21%	33%	30,908,703	100%	20%
Private	2,345,861	38%	2%	3,078,268	49%	12%	795,801	13%	4%	6,219,930	100%	4%
TOTAL*	$110,021,276	71%	100%	$ 25,038,569	16%	100%	$19,671,560	13%	100%	$154,731,405	100%	100%
1978-79												
Federal	$ 60,589,969	68%	54%	$ 16,738,142	19%	60%	$12,163,632	13%	64%	$ 89,491,743	100%	56%
State	29,510,272	89%	26%	3,778,788	11%	13%	21,600	0%	0%	33,310,660	100%	21%
Institutional (Gen./Restric)	21,038,667	71%	18%	2,808,801	9%	10%	6,091,257	20%	32%	29,938,725	100%	19%
Private	2,053,190	27%	2%	4,799,630	64%	17%	691,436	9%	4%	7,544,256	100%	4%
TOTAL*	$113,192,098	71%	100%	$ 28,125,361	17%	100%	$18,967,925	12%	100%	$160,285,384	100%	100%
1980-81												
Federal	$ 96,869,929	73%	60%	$ 20,970,143	16%	86%	$15,456,493	11%	48%	$133,296,565	100%	61%
State	28,821,302	99%	18%	226,619	1%	1%	19,988	0%	0%	29,067,909	100%	13%
Institutional (Gen./Restric)	31,894,700	62%	20%	3,275,725	6%	13%	16,659,110	32%	51%	51,829,535	100%	24%
Private	2,653,897	87%	2%	-0-	0%	0%	404,479	13%	1%	3,058,376	100%	2%
TOTAL*	$160,239,828	74%	100%	$ 24,472,487	11%	100%	$32,540,070	15%	100%	$217,252,385	100%	100%
1982-83												
Federal	$ 97,084,062	76%	60%	$ 17,140,463	13%	9%	$14,651,522	11%	31%	$128,876,047	100%	33%
State	31,526,993	42%	19%	44,097,618	58%	24%	264,933	0%	1%	75,889,544	100%	19%
Institutional (Gen/Restric)	30,881,436	57%	19%	3,167,100	6%	2%	20,114,969	37%	42%	54,163,505	100%	14%
Private	3,229,644	2%	2%	120,852,347	89%	65%	12,367,090	9%	26%	136,449,081	100%	34%
TOTAL*	$162,722,135	41%	100%	$185,257,528	47%	100%	$47,398,514	12%	100%	$395,378,177	100%	100%

*Tota may differ from other tables, as not all respond .s completed this section of the survey.

F. NONNEED-BASED UNDERGRADUATE AID DOLLARS BY TYPE

YEAR AND SCHOOL TYPE	ACADEMIC ABILITY		ACADEMIC ABILITY		LOANS (No GSL/SDSL is Included for 1982-83)		EMPLOYMENT		OTHER SKILLS		TOTAL	
	DOLLARS	Row %	DOLLARS	Row %	DOLLARS	Row %	DOLLARS	Row %	DOLLARS	Row %	DOLLARS	Row %
1974-75												
Public 2-Yr.												
Public 4-Yr.				NO	DATA	AVAILABLE						
Private												
TOTAL												
1976-77												
Public 2-Yr.	$ 416,804	10%	$ 182,620	4%	$ 1,408,046	33%	$ 1,729,203	41%	$ 523,255	12%	$ 4,259,928	100%
Public 4-Yr.	5,218,309	13%	3,094,123	7%	16,746,521	40%	15,290,194	37%	1,056,538	3%	41,405,685	100%
Private	1,586,615	23%	343,112	5%	2,206,650	31%	1,508,962	21%	1,399,879	20%	7,045,218	100%
TOTAL	$ 7,221,728	14%	$ 3,619,855	7%	$ 20,361,217	39%	$ 18,528,359	35%	$ 2,979,672	5%	$ 52,710,831	100%
1978-79												
Public 2-Yr.	$ 1,047,206	15%	$ 184,536	2%	$ 2,692,182	38%	$ 2,913,106	41%	$ 291,123	4%	$ 7,128,153	100%
Public 4-Yr.	6,381,599	9%	4,285,842	6%	32,240,381	44%	29,184,308	39%	1,561,131	2%	73,653,261	100%
Private	2,272,750	14%	808,495	5%	7,965,511	50%	3,403,165	21%	1,615,751	10%	16,065,672	100%
TOTAL	$ 9,701,555	10%	$ 5,278,873	5%	$ 42,898,074	44%	$ 35,500,579	37%	$ 3,468,005	4%	$ 96,847,086	100%
1980-81												
Public 2-Yr.	$ 1,034,230	6%	$ 274,957	1%	$ 12,310,216	75%	$ 2,556,172	16%	$ 256,156	2%	$ 16,431,731	100%
Public 4-Yr.	8,714,311	5%	5,865,157	3%	122,617,431	66%	47,098,751	25%	2,372,947	1%	186;668,597	100%
Private	2,420,771	5%	887,574	2%	26,750,659	60%	3,992,246	9%	10,815,911	24%	44,867,161	100%
TOTAL	$ 12,169,312	5%	$ 7,027,688	3%	$161,678,306	65%	$ 53,647,169	22%	$13,445,014	5%	$247,967,489	100%
1982-83												
Public 2-Yr.	$ 1,356,202	13%	$ 236,894	2%	-0-	0%	$ 8,230,470	81%	$ 375,406	4%	$ 10,198,972	100%
Public 4-Yr.	13,976,151	22%	6,967,917	11%	50,665	0%	39,173,434	63%	2,699,765	4%	62,867,932	100%
Private	4,698,649	18%	1,274,579	5%	102,265	0%	4,232,088	16%	15,882,936	61%	26,190,517	100%
TOTAL	$ 20,031,002	20%	$ 8,479,390	9%	$ 152,930	0%	$ 51,635,992	52%	$18,958,107	19%	$ 99,257,421	100%

In many cases, however, this "nonneed-based" aid actually covered "need" that the students in question had already demonstrated in conjunction with other programs.

Average % of These Dollars Estimated by Schools to be Covering Demonstrated Need Present

1978-79	1980-81	1982-83
16%	31%	33%

III. UNDERGRADUATE UNMET NEED REPORTED:

A. TOTAL DOLLAR AMOUNT OF UNDERGRADUATE UNMET NEED REPORTED

SCHOOL TYPE	AGGREGATE UNMET NEED REPORTED					TOTAL NEEDY STUDENTS REPORTED					AVERAGE UNMET NEED PER NEEDY STUDENT				
	1974-75	1976-77	1978-79	1980-81	1982-83	1974-75	1976-77	1978-79	1980-81	1982-83	74-75	76-77	78-79	80-81	82-83
Pub. 2-Yr.	$ 7,210,000	$16,496,753	$ 5,117,567	$19,022,030	$19,912,551	19,880	40,642	30,207	52,190	50,335	$363	$406	$169	$364	$396
Pub. 4-Yr.	14,440,000	11,843,914	12,916,670	25,628,251	27,484,373	56,110	60,403	67,127	82,840	95,004	257	196	192	309	289
Private	9,620,000	11,333,605	16,801,361	28,076,287	30,455,035	18,750	24,751	24,378	29,156	32,202	513	458	689	963	946
TOTAL	$31,270,000	$39,674,272	$34,835,598	$72,726,568	$77,851,959	94,740	125,796	121,712	164,186	177,541	$330	$315	$286	$443	$439

It can further be reported from the 1978-79 through 1982-83 data that, at year end, the following amount of campus-based federal aid funds were utilized:

SCHOOL TYPE	1978-79 DOLLAR AMOUNT	1980-81 DOLLAR AMOUNT	1982-83 DOLLAR AMOUNT
Public 2-Year	$ 1,114,267	$ 741,620	$ 61,475
Public 4-Year	3,385,992	8,133	20,246
Private	1,032,144	33,891	13,410
TOTAL	$ 5,532,403	$ 783,644	$ 95,131

While most of these funds represent dollars that were received too late in the school year to allocate, they do represent resources that technically were available during the period in question.

III. UNDERGRADUATE UNMEET NEED REPORTED

B. COMPARATIVE PERCENTAGE OF NEED MET:

YEAR AND SCHOOL TYPE	PERCENT OF NEED REPORTEDLY MET											
	100%		75-99%		50-74%		25-49%		1-24%		0%	
	NUMBER	ROW %	NUMBER	ROW %	NUMBER	ROW %	NUMBER	ROW %	NUMBER	ROW %	NUMBER	ROW %
1974-75												
Public 2-Year	NA		NA		NA		NA		NA		3,950	20%
Public 4-Year	NA		NA		NA		NA		NA		7,010	12%
Private	NA		NA		NA		NA		NA		2,720	15%
TOTAL*											13,680	14%
1976-77												
Public 2-Year	13,615	33%	7,497	19%	13,008	33%	2,946	7%	1,060	3%	1,941	5%
Public 4-Year	44,375	73%	8,137	13%	3,563	6%	2,255	4%	1,085	2%	988	2%
Private	8,740	37%	8,383	36%	3,878	16%	1,840	8%	509	2%	224	1%
TOTAL*	66,730	54%	24,017	19%	20,449	16%	7,041	6%	2,654	2%	3,153	3%
1978-79												
Public 2-Year	18,494	61%	3,984	13%	4,335	14%	1,930	6%	703	3%	761	3%
Public 4-Year	47,760	72%	9,349	14%	3,844	7%	2,312	4%	971	1%	1,643	2%
Private	10,748	44%	7,038	29%	3,802	16%	1,599	7%	496	2%	695	2%
TOTAL*	77,002	64%	20,371	17%	11,981	10%	5,841	5%	2,170	2%	3,099	2%
1980-81												
Public 2-Year	15,984	31%	7,202	13%	11,248	22%	13,149	25%	2,187	4%	2,420	5%
Public 4-Year	48,172	58%	16,283	20%	7,427	9%	5,391	7%	1,714	2%	3,853	4%
Private	7,711	26%	10,739	37%	5,512	19%	3,193	11%	1,625	6%	376	1%
TOTAL*	71,867	44%	34,224	21%	24,187	15%	21,733	13%	5,526	3%	6,649	4%
1982-83												
Public 2-Year	9,579	19%	8,781	17%	15,037	30%	11,421	23%	3,098	6%	2,419	5%
Public 4-Year	58,506	63%	18,817	20%	6,784	7%	3,671	4%	2,201	3%	2,705	3%
Private	8,349	27%	9,766	31%	6,368	21%	3,722	12%	2,565	8%	435	1%
TOTAL*	76,434	44%	37,364	21%	28,189	16%	18,814	11%	7,864	5%	5,559	3%

*Totals may differ from other tables because not all respondents completed this section of the survey.

C. NUMBER OF STUDENTS RECEIVING DIFFERENT TYPES OF NEED-BASED AID (NJ: Unduplicated Student Numbers): No Comparable Earlier Data Are Available.

SCHOOL TYPE	AID TYPE								
	SCHOLARSHIPS/GRANTS			LOANS			WORK		
	1978-79	1980-81	1982-83	1978-79	1980-81	1982-83	1978-79	1980-81	1982-83
Public 2-Year	26,342	47,422	42,072	5,485	4,386	10,703	5,910	6,454	5,869
Public 4-Year	55,921	59,718	68,457	36,003	36,676	62,149	13,929	22,780	28,197
Private	22,452	26,680	26,395	8,347	10,187	16,504	8,822	10,448	9,574
TOTAL	104,715	133,820	136,924	49,835	51,249	89,356	28,661	39,682	43,640

D. AVERAGE AGE OF UNDERGRADUATE STUDENT AND NEEDY AID APPLICANT POPULATIONS: No Comparable Earlier Data Are Available.

SCHOOL TYPE	UNDERGRADUATE STUDENT BODY			NEEDY UNDERGRADUATE AID APPLICANTS		
	1978-79	1980-81	1982-83	1978-79	1980-81	198[illegible]
Public 2-Year	26.6 years	26.4 years	27.2 years	23.6 years	22.5 years	24.3 [illegible]
Public 4-Year	22.1 years	21.1 years	21.3 years	21.3 years	20.1 years	20.7 years
Private	21.4 years	20.6 years	21.0 years	20.8 years	20.3 years	20.5 years
OVERALL	23.4 years	22.7 years	22.9 years	21.9 years	20.9 years	21.2 years

IV. CAMPUS LEVEL UNDERGRADUATE AID ADMINISTRATIVE COSTS AND PERSONNEL REPORTED:

A. TOTAL UNDERGRADUATE AID ADMINISTRATIVE COSTS

SCHOOL TYPE	TOTAL (NEED AND NONNEED) UNDERGRADUATE AID DOLLARS REPORTED				
	1974-75	1976-77	1978-79	1980-81	1982-83
Public 2-Year	$ 21,690,000	$ 34,297,164	$ 32,736,826	$ 53,507,317	$ 66,293,598
Public 4-Year	98,380,000	119,224,277	157,644,434	295,560,189	306,379,203
Private	39,400,000	53,922,164	66,751,210	116,152,368	121,962,797
TOTAL	$159,470,000	$207,443,605	$257,132,470	$465,219,874	$494,635,598

SCHOOL TYPE	TOTAL UNDERGRADUATE ADMINISTRATIVE COSTS REPORTED									
	1974-75		1976-77		1978-79		1980-81		1982-83	
	DOLLARS	% AID	DOLLARS	% AID	DOLLARS	% AID	DOLLARS	% AID	DOLLARS	% AID
Public 2-Year	$1,380,000	6%	$1,915,093	6%	$ 3,579,489	10%	4,678,676	9%	$ 5,401,966	8%
Public 4-Year	2,880,000	3%	4,097,303	3%	6,580,674	4%	11,792,664	4%	8,569,300	3%
Private	$ 940,000	2%	1,269,949	2%	2,449,510	4%	3,069,182	3%	3,049,470	3%
TOTAL	$5,200,000	3%	$7,282,345	3%	$12,609,673	5%	19,540,522	4%	$17,020,736	3%

B. TOTAL FTE UNDERGRADUATE AID PERSONNEL

YEAR AND SCHOOL TYPE	AID OFFICE PROFESSIONAL	AID OFFICE CLERICAL AND STUDENT	BUSINESS OFFICE PROFESSIONAL	BUSINESS OFFICE CLERICAL	TOTAL
1974-75					
Public 2-Year	NO DATA AVAILABLE				
Public 4-Year					
Private					
TOTAL					
1976-77					
Public 2-Year	49	53	22	29	153
Public 4-Year	82	113	37	54	286
Private	55	47	42	48	192
TOTAL	186	213	101	131	631
1978-79					
Public 2-Year	60	96	20	31	207
Public 4-Year	105	189	36	60	390
Private	58	81	35	37	211
TOTAL	223	366	91	128	808
1980-81					
Public 2-Year	50	112	19	26	207
Public 4-Year	118	220	39	64	441
Private	58	64	42	32	196
TOTAL	226	396	100	122	844
1982-83					
Public 2-Year	63	127	25	40	255
Public 4-Year	125	277	42	74	518
Private	69	92	53	34	248
TOTAL	257	496	120	148	1,021

C. SELECTED UNDERGRADUATE AID PROGRAM PERSONNEL RATIOS:

YEAR AND SCHOOL TYPE	TOTAL FTE UNDERGRADUATE F.A. STAFF IN F.A. OFFICE	TOTAL NEED AND NONNEED UNDERGRADUATE AID DOLLARS DISTRIBUTED		TOTAL NEEDY APPLICANTS	
		DOLLARS	$/FTE STAFF	NUMBER	STU./FTE STAFF
1974-75					
Public 2-Year					
Public 4-Year	NO DATA AVAILABLE				
Private					
TOTAL					
1976-77					
Public 2-Year	102	$ 34,297,164	$336,247	40,642	399
Public 4-Year	195	119,224,277	611,407	60,403	310
Private	102	53,922,164	528,649	24,751	243
TOTAL	399	$207,443,605	$519,909	125,796	316
1978-79					
Public 2-Year	156	$ 32,736,826	$209,851	30,207	194
Public 4-Year	294	157,644,434	536,206	67,127	228
Private	139	66,751,210	480,225	24,378	175
TOTAL	589	$257,132,470	$436,558	121,712	207
1980-81					
Public 2-Year	162	$ 53,507,317	$330,292	52,190	322
Public 4-Year	338	295,560,189	874,438	82,840	245
Private	122	116,152,368	952,068	29,156	238
TOTAL	622	$465,219,874	$747,942	164,185	254
1982-83					
Public 2-Year	190	$ 66,293,598	$348,914	50,335	265
Public 4-Year	402	306,379,203	762,137	95,004	236
Private	161	121,962,797	757,533	32,202	200
TOTAL	753	$494,635,598	$656,887	177,541	236

V. SELECTED 1982-83 TOTAL (FEDERAL AND MATCH) DATA BY INDIVIDUAL PROGRAM.

No earlier comparable data available.

A. UNDERGRADUATE 1982-83 NDSL RECIPIENTS AND DOLLARS BY FAMILY INCOME LEVEL AND SCHOOL TYPE

	NDSL RECIPIENTS			NDSL DOLLARS		
School Type & Income Level	Number	U.G. Sector % Total	Undergrad. % Grand Total	Amount	U.G. Sector % Total	% U.G. Grand Total
Public 2-Year						
$ 0- 5,999	92	6%	NA	$38,625	5%	NA
6,000-11,999	129	8%	NA	55,851	8%	NA
12,000-17,999	130	8%	NA	67,097	9%	NA
18,000-23,999	124	8%	NA	71,688	10%	NA
24,000-29,999	114	7%	NA	60,186	8%	NA
30,000 & Over	78	5%	NA	41,466	6%	NA
U.G. Inde.	923	58%	NA	387,386	54%	NA
U.G. TOTAL	1,590	100%	6%	$722,299	100%	4%
Public 4-Year						
$ 0- 5,999	1,479	7%	NA	$ 911,927	7%	NA
6,000-11,999	2,151	11%	NA	1,396,455	10%	NA
12,000-17,999	3,047	15%	NA	1,996,174	14%	NA
18,000-23,999	3,429	18%	NA	2,183,585	16%	NA
24,000-29,999	2,416	12%	NA	1,591,358	12%	NA
30,000 & Over	2,425	12%	NA	1,654,268	12%	NA
U.G. Inde.	4,867	25%	NA	4,042,031	29%	NA
U.G. TOTAL	19,814	100%	71%	$13,775,798	100%	78%
Private						
$ 0- 5,999	281	7%	NA	182,949	6%	NA
6,000-11,999	462	11%	NA	339,928	11%	NA
12,000-17,999	561	13%	NA	446,596	14%	NA
18,000-23,999	703	17%	NA	547,204	17%	NA
24,000-29,999	734	17%	NA	560,321	17%	NA
30,000 & Over	936	22%	NA	735,224	23%	NA
U.G. Inde.	580	13%	NA	400,671	12%	NA
U.G. TOTAL	4,257	100%	17%	$3,212,893	100%	18%
Total						
$ 0- 5,999	1,852	NA	7%	$1,133,501	NA	6%
6,000-11,999	2,742	NA	11%	1,792,234	NA	10%
12,000-17,999	3,738	NA	15%	2,509,867	NA	14%
18,000-23,999	4,256	NA	17%	2,802,477	NA	16%
24,000-29,999	3,264	NA	13%	2,211,865	NA	12%
30,000 & Over	3,439	NA	13%	2,430,958	NA	14%
U.G. Inde.	6,370	NA	24%	4,830,088	NA	28%
U.G. GRAND TOTAL	25,661	NA	100%	$17,710,990	NA	100%

V. SELECTED 1982-83 TOTAL (FEDERAL AND MATCH) DATA BY INDIVIDUAL PROGRAM. No Earlier Comparable Data Available.

B. UNDERGRADUATE 1982-83 SEOG (IV & CV) RECIPIENTS AND DOLLARS BY FAMILY INCOME LEVEL AND SCHOOL TYPE

	SEOG RECIPIENTS			SEOG DOLLARS		
School Type & Income Level	Number	U.G. Sector % Total	Undergrad. % Grand Total	Amount	U.G. Sector % Total	% U.G. Grand Total
Public 2-Year						
$ 0- 5,999	450	10%	NA	$ 134,718	10%	NA
6,000-11,999	433	10%	NA	115,460	9%	NA
12,000-17,999	339	7%	NA	93,560	7%	NA
18,000-23,999	260	6%	NA	83,975	6%	NA
24,000-29,999	165	4%	NA	53,413	4%	NA
30,000 & Over	99	2%	NA	32,213	2%	NA
U.G. Inde.	2,792	61%	NA	816,506	62%	NA
U.G. TOTAL	4,538	100%	21%	$1,329,845	100%	12%
Public 4-Year						
$ 0- 5,999	1,210	10%	NA	$ 605,669	10%	NA
6,000-11,999	1,669	14%	NA	867,824	14%	NA
12,000-17,999	2,224	19%	NA	1,082,600	17%	NA
18,000-23,999	1,747	15%	NA	940,515	15%	NA
24,000-29,999	1,222	10%	NA	696,896	11%	NA
30,000 & Over	1,010	8%	NA	568,334	9%	NA
U.G. Inde.	2,894	24%	NA	1,485,305	24%	NA
U.G. TOTAL	11,976	100%	55%	$6,247,143	100%	56%
Private						
$ 0- 5,999	491	9%	NA	$ 315,150	9%	NA
6,000-11,999	639	12%	NA	398,477	12%	NA
12,000-17,999	758	14%	NA	505,635	15%	NA
18,000-23,999	797	15%	NA	571,761	16%	NA
24,000-29,999	803	15%	NA	557,646	16%	NA
30,000 & Over	859	17%	NA	609,290	17%	NA
U.G. Inde.	910	18%	NA	534,172	15%	NA
U.G. TOTAL	5,257	100%	24%	$3,492,121	100%	32%
Total						
$ 0- 5,999	2,151	NA	10%	$1,055,537	NA	10%
6,000-11,999	2,741	NA	13%	1,381,761	NA	12%
12,000-17,999	3,321	NA	15%	1,681,795	NA	15%
18,000-23,999	2,804	NA	13%	1,595,241	NA	14%
24,000-29,999	2,190	NA	10%	1,307,955	NA	12%
30,000 & Over	1,968	NA	9%	1,209,837	NA	11%
U.G. Inde.	6,596	NA	30%	2,835,983	NA	26%
U.G. GRAND TOTAL	21,771	NA	100%	$11,069,109	NA	100%

424V. SELECTED 1982-83 TOTAL (FEDERAL AND MATCH) DATA BY INDIVIDUAL PROGRAM. No Earlier Comparable Data Available.

C. UNDERGRADUATE 1982-83 CWS RECIPIENTS AND DOLLARS BY FAMILY INCOME LEVEL AND SCHOOL TYPE

School Type & Income Level	CWS RECIPIENTS Number	CWS RECIPIENTS U.G. Sector % Total	CWS RECIPIENTS Undergrad. % Grand Total	CWS DOLLARS Amount	CWS DOLLARS U.G. Sector % Total	CWS DOLLARS % U.G. Grand Total
Public 2-Year						
$ 0- 5,999	404	10%	NA	$331,138	9%	NA
6,000-11,999	520	13%	NA	439,638	12%	NA
12,000-17,999	453	11%	NA	406,921	11%	NA
18,000-23,999	375	9%	NA	330,523	9%	NA
24,000-29,999	267	7%	NA	247,962	7%	NA
30,000 & Over	156	4%	NA	136,659	4%	NA
U.G. Inde.	1,896	46%	NA	1,782,526	48%	NA
U.G. TOTAL	4,071	100%	18%	$3,675,367	100%	20%
Public 4-Year						
$ 0- 5,999	1,105	8%	NA	$975,419	9%	NA
6,000-11,999	1,661	12%	NA	1,446,426	13%	NA
12,000-17,999	2,187	16%	NA	1,782,036	16%	NA
18,000-23,999	2,322	17%	NA	1,861,639	17%	NA
24,000-29,999	2,015	15%	NA	1,508,601	14%	NA
30,000 & Over	1,446	11%	NA	1,106,267	10%	NA
U.G. Inde.	2,851	21%	NA	2,356,006	21%	NA
U.G. TOTAL	13,587	100%	59%	$11,036,394	100%	59%
Private						
$ 0- 5,999	476	9%	NA	$398,249	11%	NA
6,000-11,999	573	11%	NA	432,315	11%	NA
12,000-17,999	665	13%	NA	510,494	13%	NA
18,000-23,999	796	15%	NA	617,481	16%	NA
24,000-29,999	829	16%	NA	623,421	16%	NA
30,000 & Over	1,195	23%	NA	742,620	19%	NA
U.G. Inde.	709	13%	NA	545,512	14%	NA
U.G. TOTAL	5,243	100%	23%	$3,870,092	100%	21%
Total						
$ 0- 5,999	1,985	NA	9%	$1,704,806	NA	9%
6,000-11,999	2,754	NA	12%	2,318,379	NA	12%
12,000-17,999	3,305	NA	14%	2,699,451	NA	15%
18,000-23,999	3,493	NA	15%	2,809,643	NA	15%
24,000-29,999	3,111	NA	14%	2,379,984	NA	13%
30,000 & Over	2,797	NA	12%	1,985,546	NA	11%
U.G. Inde.	5,456	NA	24%	4,684,044	NA	25%
U.G. GRAND TOTAL	22,901	NA	100%	$18,581,853	NA	100%

V. SELECTED 1982-83 TOTAL (FEDERAL AND MATCH) DATA BY INDIVIDUAL PROGPAM. No Earlier Comparable Data Available.

D. UNDERGRADUATE 1982-83 PELL RECIPIENTS AND DOLLARS BY SCHOOL TYPE

School Type & Income Level	PELL RECIPIENTS			PELL DOLLARS		
	Number	U.G. Sector % Total	Undergrad. % Grand Total	Amount	U.G. Sector % Total	% U.G. Grand Total
Public 2-Year						
$ 0- 5,999	Not Available			Not Available		
6,000-11,999						
12,000-17,999						
18,000-23,999						
24,000-29,999						
30,000 & Over						
U.G. Inde.						
U.G. TOTAL	39,284	42%		$27,377,293	32%	
Public 4-Year						
$ 0- 5,999	Not Available			Not Available		
6,000-11,999						
12,000-17,999						
18,000-23,999						
24,000-29,999						
30,000 & Over						
U.G. Inde.						
U.G. TOTAL	39,024	42%		$39,419,561	47%	
Private						
$ 0- 5,999	Not Available			Not Available		
6,000-11,999						
12,000-17,999						
18,000-23,999						
24,000-29,999						
30,000 & Over						
U.G. Inde.						
U.G. TOTAL	15,239	16%		$17,548,392	21%	
Total						
$ 0- 5,999	Not Available			Not Available		
6,000-11,999						
12,000-17,999						
18,000-23,999						
24,000-29,999						
30,000 & Over						
U.G. Inde.						
U.G. GRAND TOTAL	93,547	100%		$84,345,246	100%	

E. COMBINED 1982-83 CAMPUS BASED (NDSL, SEOG, AND CWS) AND PELL PROGRAM DATA BY SCHOOL TYPE

School Type	NDSL		SEOG (IY & CY)		CWS		PELL		Campus Based & Pell Combined* Total	
	Number*	Amount	Number*	Amount	Number*	Amount	Number*	Amount	Number*	Amount
Public 2-Yr.	1,590	$ 722,299	4,538	$1,329,845	4,071	$3,675,367	39,284	$27,377,293	49,483	$33,104,804
Row %	3%	2%	9%	4%	8%	11%	80%	83%	100%	100%
Col.%	6%	4%	21%	12%	18%	20%	42%	32%	30%	25%
Public 4-Yr.	19,814	13,775,798	11,976	6,247,143	13,587	11,036,394	39,024	39,419,561	84,401	70,478,896
Row %	24%	19%	14%	9%	16%	16%	46%	56%	100%	100%
Col.%	77%	78%	55%	56%	59%	59%	42%	47%	52%	54%
Private	4,257	3,212,893	5,257	3,492,121	5,243	3,870,092	15,239	17,548,392	29,996	28,123,498
Row %	14%	11%	18%	12%	17%	14%	51%	63%	100%	100%
Col.%	17%	18%	24%	32%	23%	21%	16%	21%	18%	21%
TOTAL	25,661	$17,710,990	21,771	$11,069,109	22,901	$18,581,853	93,547	$84,345,246	163,880	$131,707,198
Row %	16%	13%	13%	9%	14%	14%	57%	64%	100%	100%
Col.%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

*Student count not unduplicated

AN OVERVIEW OF FORMULA FUNDING IN HIGHER EDUCATION

427

STATE OF MICHIGAN

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COMMISSION ON THE FUTURE OF HIGHER EDUCATION
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AN OVERVIEW OF FORMULA FUNDING IN HIGHER EDUCATION

Prepared For

THE GOVERNOR'S COMMISSION ON THE FUTURE OF HIGHER EDUCATION

August 1984

In its preliminary report, the Governor's Commission on the Future of Higher Education in Michigan noted:

> "The current method of distributing state aid to individual public colleges and universities and community colleges fails to account for enrollment changes, differences in program costs, and different educational roles."

Formula budgeting is one way to link state funding to enrollment, costs and roles. This paper describes how higher education formulas work, their use throughout the country, Michigan's experience, and finally examines some of their problems and makes a number of recommendations.

1. How Formulas Work

Higher education funding formulas are mathematical computations which manipulate an institution's expenditure history and other quantified variables in an attempt to accurately project future expenditure levels and future funding needs. Since higher education institutions are very complex organizations, the formulas intended to predict their fiscal needs are also quite complex. The following is a greatly simplified description of a typical formula.

- Instructional need is calculated by multiplying systemwide average per student instructional expenditures or some other enrollment-sensitive instructional variable by each institution's projected enrollment.

- Noninstructional needs such as research, public service, and physical plant operation costs are estimated using prior year expenditures and other variables and policies.

- Estimated instructional and noninstructional needs are combined to determine an institution's total need.

- The state appropriation needed for an institution is the amount remaining after estimated tuition revenue, and in the case of community colleges, estimated local tax revenue, is subtracted from the institution's total need.

2. The Use of Formulas in Other States

Many states use formulas in some phase of their budget process, but formulas typically are not the only factor used to determine appropriations. Higher education finance literature indicates that nearly all states use some quantified approach to correlate funding with enrollments, but less than half use formulas to develop budget requests and only a portion of these states actually use formulas to distribute funds.

The following table identifies those states that have used higher education formulas in some phase of their budget process:

BUDGET FORMULA UTILIZATION BY STATES[1]

State	1951	1963	1967	1973	1977	1980
Alabama			x	x	x	x
Alaska					x	
Arkansas				x	x	x
California	x	x	x			
Colorado				x		x
Connecticut			x			
Florida		x	x	x	x	x
Georgia				x	x	x
Illinois			x			
Indiana	x		x			
Kansas						x
Kentucky		x	x			x
Louisiana			x	x	x	x
Maryland				x		
Minnesota			x	x		
Mississippi			x	x	x	x
Missouri				x	x	x
Montana						x
Nevada				x	x	
New Jersey				x	x	x
New Mexico			x		x	
New York				x	x	
North Dakota			x	x	x	
Ohio				x	x	x
Oklahoma	x	x	x	x		x
Oregon			x			
Pennsylvania				x		x
South Carolina				x	x	x
South Dakota				x	x	
Tennessee		x	x	x	x	x
Texas	x	x	x	x	x	x
Virginia				x	x	
Washington				x	x	x
West Virginia				x	x	
Wisconsin				x	x	
Totals	4	6	16	25	22	19

The use of formulas in the budget process does not always mean that a state also uses a formula to actually distribute funds.

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[1] Gross, Francis M., *Formula Budgeting for Higher Education: State Practices in 1979-80.* National Center for Higher Education Management Systems, 1982.

While specific numbers were not provided, the author of the above study observed, "Formulas are used more to *develop* appropriation requests of colleges and universities than to *allocate* state funds to individual institutions. In good tax receipt years, some states fund fully the formula-derived requests for higher education. Others are selective as to which institutions receive full funding. However, in many formula states, the formula-derived request represents only the starting point in the appropriation process."[2]

3. Michigan's Formula Experience

Formulas have not been used to actually appropriate state funds for Michigan colleges and universities, but have been used periodically for community college appropriations. Formulas, however, have been part of the college and university budget process: in the late 1970s a college and university budget request formula, the "Owen-Huffman Investment Needs Model,"[3] was developed by the Legislature and the Fiscal Year 1976 through Fiscal Year 1982 college and university Executive Budget Recommendations[4] were based on an average cost funding formula. Since these two formulas provide a foundation upon which future college and university formulas could be constructed, a more complete description is in order.

The Investment Needs Model and the Executive Formula are similar in a number of ways, but their basic philosophies are quite different. Essentially, the Investment Needs Model is based on standards of appropriate expenditure levels negotiated by the institutions and legislative fiscal agencies, while the Executive Formula is based primarily on actual prior year expenditures. The Investment Needs Model, then, projects what expenditures and revenues ought to be; the Executive Formula attempts to estimate what expenditures and revenues will be. A comparison of the two methodologies' treatment of instruction costs and tuition revenue demonstrate this difference.

The Investment Needs Model builds an institution's instruction expenditure need from a base of zero using negotiated "performance output expectations" (various student-faculty ratios) and faculty compensation standards; the Executive Formula uses actual prior year average systemwide instructional expenditures. Similarly, the Investment Needs Model incorporates a tuition revenue standard that significantly reduces projected tuition revenue (tuition revenue, as a percent of total revenue, is reduced to 1966-67 levels of 22.5 percent); while the Executive Formula leaves tuition revenue essentially at its actual level.

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[2] Gross, Francis M. "Formula Budgeting and Financing of Public Higher Education," *Instructional Research Issues and Applications 1978-1983*. University of Toledo, 1983.

[3] *Recommendations for Revising the Owens-Huffman Investment Needs Model, 1979-80*. Senate Fiscal Agency, House Fiscal Agency, May 1979.

[4] *Executive Budget*, Fiscal Year 1982, pages K1-K25.

As the following table shows, the two formulas result in a rather different range of funding levels.

INSTITUTIONS RANKED BY PERCENT INCREASE IN STATE APPROPRIATION

	Investment Needs Model (1979-80)	Executive Formula (1981-82)	Rank Difference
LSSC	1	1	0
UM-AA	2	9	-7
FSC	3	2	1
UM-D	4	5	-1
MSU	5	6	-1
MTU	6	4	- 2
CMU	7	7	0
WSU	8	13	-5
GVSC	9	12	-3
SVSC	10	3	7
UM-F	11	14	-3
OU	12	8	4
WMU	13	10	3
EMU	14	11	3
NMU	15	15	0

Also, not surprisingly, the Executive Formula, since it is based on the system's actual expenditure and revenue patterns rather than standards of what the expenditures and revenues ought to be, predicts actual expenditures and revenues somewhat better than the Investment Needs Model. The following table compares projected needs to actual expenditures for both formulas in the last year in which they were computed.

1979-80

	Total*	State*	Tuition & Other*
Investment Needs Model	$998.2	$728.1	$270.1
Actual Expenditures	941.2	615.3	325.9

1981-82

	Total*	State*	Tuition & Other*
Executive Formula	$1,057.8	$658.1	$399.7
Actual Expenditures	1,050.8	620.8	430.0

*In millions

A more complete description of the two formulas is attached.

As was noted at the beginning of this section, community college appropriations have periodically been based on formulas. The Fiscal Year 1985 state aid is allocated using a mathematical model developed by the House Fiscal Agency. Briefly, the formula is a complex average cost driven model that also equalizes the effects of variations in local property wealth and provides special equipment funding. Just as in the college and university appropriations, community college appropriations have not been adjusted for enrollment changes for a number of years and, as a consequence, this model results in a wide range of state aid percent changes; aid varies from a reduction of 7.4 percent to an increase of 73.3 percent. The final appropriation, however, compacts these changes into a range of +8.25 percent to +13.0 percent.

4. Problems with Michigan's Formulas

Problems associated with Michigan's formulas can be divided into three categories: technical, policy related, and tactical.

A. Technical Problems

- Marginal Cost: Formulas based on average costs and standards alone are not able to accurately predict fiscal needs in periods of enrollment fluctuation.[5] When workload volume changes, costs do not change arithmetically--that is, a one percent cost change for a one percent volume change--instead they fluctuate marginally, an amount less than the volume change. For example, if enrollment declines from 100 to 90 students in a political science lecture course, costs are not reduced by 10 percent because the classroom still needs to be heated and cleaned, the lecturer still paid. Marginal cost variables, such as those developed in other states, need to be incorporated into Michigan's formulas if they are to be accurate predictors of costs.

- Reliability of Data: Recent reviews by the Auditor General uncovered numerous college reporting errors in the community college database. While similar audits have not been performed on the college and university database, Commission staff have encountered a number of inconsistencies. For example, institutions report conferring degrees in academic areas where they report no expenditures. A routine audit or cost-study process would increase confidence in both databases.

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[5] Allen, Richard H., Brinkman, Paul. Marginal Costing Techniques for Higher Education, National Center for Higher Education Management Systems, 1983.

B. Policy Concerns

- Quality: Michigan's average cost driven formulas, and to a great extent its negotiated standard formula, do not recognize differences in instructional quality or reward efforts to improve quality. While somewhat overstated, the following quote from a university president accurately characterizes the effect of formulas that fund programs at a systemwide average or a standard which makes only modest differentiations between programs: "Put simply the ideal is that Wasteland Branch of Outreach University earns the same amount of dollars for an FTE in a master's program in history as does Flagship University for the 'identical program.'"[6] Quality variables, however, can be incorporated into the budgeting process to address this problem.

  Tennessee is a state widely recognized for its innovative approach to enhancing quality. Here, a "performance variable" has been added to the funding formula. This variable awards up to a 2 percent bonus to institutions with high quality programs. Here, quality is measured by accreditation of programs; performance of graduates; evaluation of programs by students, alumni, and employers; and peer evaluations.[7]

- Program and Institutional Role Choices: Michigan's formulas tend to endorse the status quo, they do not offer a vehicle to secure funding for new programs and do not withdraw funding from unnecessary programs. Program choices are largely left to the institutions. The structure of the data and the mechanics of formula funding can be used to make choices, and, indeed, they have occasionally been used to do so. For example, the 1981-82 Executive Formula began to withdraw state support of the public service function of state colleges and universities. Similarly, previous, but not the current, community college formulas did not subsidize leisure-time courses. What appears to be lacking is a clear statement of institutional roles and a mechanism to make program increase and decrease recommendations.

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[6] Allen, Richard H., Topping, James R. Cost Information and Formula Funding: New Approaches. National Center for Higher Education Management Systems, 1979.

[7] Allocation of State Funds on a Performance Criterion. Tennessee Higher Education Commission, 198[illegible].

C. Tactical Problems

The experience in Michigan and other states indicates that it is quite difficult to achieve formula funding. The difficulty is a political one: the use of an objective and rationale formula will result in a range of institutional winners and losers that is frequently too wide to be acceptable. Similar to the ranges already noted for community colleges, the 1981-82 Executive Formula generated percent increases ranging from 4.5 percent to 35.5 percent and the Investment Needs Model produced increases varying from 15.3 percent to 37.1 percent. As was stated earlier, neither of these models has been used to make appropriations.

The political environment, however, may now be willing to consider formula funding. The Fiscal Year 1985 community college appropriation is based on a constrained formula and the Fiscal Year 1985 college and university appropriation act endorses the development of a formula. The relevant section of the act reads:

> Sec. 4.(1) It is the intent of the legislature that future appropriations be based upon a legislative model for determining the financial needs of higher education. The model shall be based upon performance by program and level of instruction and the differences that exist among institutions due to variances in roles and missions, and programs providing special grants for unique programs.
>
> (2) The public baccalaureate institutions, the senate fiscal agency, the house fiscal agency, and the department of management and budget shall cooperate in developing recommendations to refine the investment needs model for consideration by the governor and the legislature. This cooperative effort shall be coordinated by the senate fiscal

agency, the house fiscal agency, and the department of management and budget. A joint report and recommendations shall be submitted to the governor and the senate and house appropriations committees not later than November 15, 1985. An interim progress report shall be submitted to the governor, and the senate and house appropriations committees not later than January 1, 1985.

5. Conclusions

Michigan's existing higher education formulas are imperfect, but many of the problems are correctable. For the short term, an average cost-based college and university formula, adjusted for institutional roles and program policies, could be used to implement the Commission's recommendations. Future college and university and community college formulas should address the marginal cost and other problems discussed above. The joint Executive-Legislative institution task force described in Section 4 of the appropriation act is one vehicle for this development. Finally, if funding is to be based on formulas, routine cost studies should be performed to increase confidence in the data upon which the formulas are based.

ATTACHMENT

COMPARISON OF THE VARIABLES OF THE 1981-2 EXECUTIVE FORMULA AND THE 1979-80 INVESTMENT NEEDS MODEL

MAJOR VARIABLES	1981-2 EXECUTIVE FORMULA	1979-80 INVESTMENT NEEDS MODEL
I. Instruction	• Using 1979-80 expenditures, state-wide average student credit hour (SCH) costs are calculated for 31 academic areas and 4 levels of instruction. Each average cost is then increased by 9.5% to develop estimated 1980-1 averages. • Statewide average costs are then multiplied by projected 1981-2 student credit hours for each institution to derive an estimate of total instructional costs. • This total is then adjusted by various factors intended to place UM faculty compensation in 92nd percentile of institutions nationally, MSU and WSU in the 85th percentile and all others at the 80th percentile.	• Faculty needed: Faculty per student credit hour (SCH) workload ratios are established "according to multiple regression analysis." Each institution's enrollment growth is estimated by legislative fiscal agencies (estimates varied from 0% to 9.4% increases, actual two year change varied from a decline of 8.0% to an increase of 13.7%). Each institution's projected SCH enrollment is multiplied by the established faculty ratio to determine faculty needed. • Faculty compensation: Existing faculty compensation is manipulated by various factors designed to place UM at 95th national compensation percentile, MSU and WSU at 90th and all others at 80th. • Other costs: Compensation costs for other personnel, and supplies and materials costs computed based primarily on system averages. • Instructional costs: Faculty and other costs are added to produce projected instructional costs.
II. Non-instruction		
A. Research	• Research costs are defined as 1% of faculty compensation plus 12% of non-general fund research expenditures.	• Research costs are defined as 2% of faculty compensation plus 15% of non-general fund research expenditures.
B. Public Service	• Begin phase out, 35% of prior year expenditures.	• Defined as 1% of faculty compensation plus $460,000 for public TV and $118,000 for public radio. (These are also the average level of federal contributions.)

MAJOR VARIABLES	1981-2 EXECUTIVE FORMULA	1979-80 INVESTMENT NEEDS MODEL
C. Academic Support	• Equals 20% of research, public service and instructional costs.	• Costs are again projected, "based on multiple regression analysis." Needs per FYES are multiplied by projected enrollment; result is about 20-25% of instructional, public service and research costs.
D. Student Services	• Defined as $119.50 per head count, plus $4.32 per credit hour	• Defined as $45.90 per head count, plus $3.62 per credit hour.
E. Financial Aid	• Defined as 26% of federal Basic Education Opportunity Grant (BEOG), plus $2.10 per undergraduate credit hour, plus $406.86 per graduate FYES. The sum of these is then increased by 25%.	• Defined as 60% of BEOG, $2.36 per undergraduate credit hour, $462 per graduate FYES.
F. Plant Operation	• Systemwide average costs per sq. ft. multiplied by institution's sq. ft.	• Defined essentially as institution's prior year expenditures.
G. Institutional Support	• Defined as $8.7 million plus 4% of all other costs for WSU, MSU, UM. For the balance of institutions, it is $.8 million plus 12%.	• Again, based on a "regression analysis," a number of variables are established to project support needs.
III. Non-formula Items	• For the Agricultural Experiment Station, Cooperative Extension, MTU Research Units, Gerontology, UM Mental Health, U.P. Medical Education, and all medical schools, prior year expenditures, plus an inflation factor, are used.	• Same as Executive Formula
IV. State Aid Calculation	• Add Instructional, Non-instructional and Non-formula items to determine gross expenditure level.	• Add instructional, non-instructional and non-formula items to determine gross expenditure level.

MAJOR VARIABLES	1981-2 EXECUTIVE FORMULA	1979-80 INVESTMENT NEEDS MODEL
	● Calculate tuition revenue as follows: in-state students support 40% of most gross expenditure items, out-of-state students 80%. If this calculation generates more than a 35% increase in tuition revenue for any institution, tuition revenue is capped at 35% increase.	● Calculate tuition revenue as follows: multiply student credit hours by $1 for undergraduate resident student, $2 for non-residents; $2 for resident graduate students, $3 for non-resident graduate students.
	● State aid is the difference between tuition revenue--about 30% of gross expenditures--and gross expenditures.	● State aid is the difference between tuition revenue--about 22.5% of gross revenue--and gross revenue. The range in percent change produced by this calculation is 15.3% to 37.1%.
	● The percent change produced by the calculation above ranged from 4.5% to 35.6%. The final Executive recommendation compacted these changes into a 9.5% to 14.0% range.	

TRUSTEE SELECTION RECOMMENDATIONS-NATIONAL COMMISSION ON COLLEGE AND UNIVERSITY TRUSTEE SELECTION

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Trustee Selection Recommendations (Public)

A second report from the National Commission's proposals for improving the selection process

The purpose of this report by the National Commission on College and University Trustee Selection is to offer recommendations on how to improve the selection of trustees in public colleges and universities.*

Seven assumptions

In the course of its deliberations the Commission has developed seven basic assumptions about the selection of trustees for public governing boards.

1. The future of the lay governing board as a viable alternative to direct state or federal control of colleges and universities will depend in large measure on the competence of those who are chosen to serve as trustees and regents.
2. There has been a general and pervasive erosion in the autonomy of public governing boards and their presidents to manage internal affairs as a result of governmental regulatory initiatives. Such erosion threatens the independent authority for educational decisions which has been the strength of American higher education since its inception. Colleges and universities cannot fulfill their responsibilities to society if they are looked upon and treated as another public utility.
3. One manifestation of improper governmental intrusion is what seems to be the priority given to political rather than qualitative criteria in trustee selection processes.
4. The lack of diversity and balance in age, sex, minority status, geographic coverage, and professional expertise in board membership limits board perspective and seriously damages the board's legitimacy and credibility. At the same time, upon assuming their positions trustees must function in the interest of the whole institution rather than of any of its separate constituencies.
5. Current board members, college presidents, public citizens, and others concerned about the academic community can and should serve as consultants to the appointing authority when board vacancies arise.
6. Governors, state legislators, and other public officials will welcome guidelines to strengthen trustee selection processes—guidelines which can be adapted to the particular circumstances of their states or systems of public higher education.
7. More open and systematic procedures for trustee selection will improve the probability that only highly qualified persons with a demonstrated commitment to higher education will be chosen to serve on public governing boards.

These seven assumptions were influenced by a thorough understanding of and appreciation for the fundamental diversity of American public postsecondary institutions. This diversity, which extends to structure, purpose, trustee selection method, and institutional tradition was fully recognized throughout the Commission's deliberations.

Boards of Trustees: An Overview

Structure and Purpose

There are approximately 7,000 trustees serving on 770 public boards which govern some 1,488 colleges and universities and 9.1 million students. The remarkable diversity of structure and purpose of these boards and the institutions they govern is reflected in the following data:

More than 130 of the 770 boards govern a multicampus institution. Many states have statewide governing boards. In some of these the board has authority only over public four-year institutions.

Over 900 public two-year colleges have primarily a local orientation and concentrate on teaching and service missions.

Approximately 360 four-year colleges

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*Recommendations for improving selection of trustees of private institutions appeared in *AGB Reports*, November-December 1980.

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> *"Qualified candidates should be carefully screened"*

and universities are primarily local and/or state-oriented and tend to concentrate on their teaching and service missions.

Approximately 120 public universities are state, regional, national, and international in their orientations and have a full range of teaching, service, and research missions.

Selection Methods and Traditions

There are three basic methods of trustee selection: appointment, election, or by virtue of position. Trustees may be appointed by a governor, the legislature, a local municipal official, or the board itself. They may be elected by the citizens of a state or local district, by the legislature, or by some group such as alumni, or agricultural or industrial associations.

Ex officio

Some state statutes specify certain public officials as trustees by virtue of the office (*ex officio*), occasionally with voting privileges. An individual governing board may have trustees selected by all three of these methods. For purposes of clarification, however, we will discuss each selection method separately.

Appointment. Gubernatorial appointment with senate or legislative confirmation is by far the most common trustee selection method for publicly supported colleges and universities. An estimated 70-75 percent of trustees in public four-year colleges and universities are appointed by public officials, most often the governor with the consent of at least one house of the legislature. In 30 states the governor appointed the trustees to state boards governing public two-year colleges, and in 14, local community college trustees are appointed either by the governor or a local governing body.

A few public boards employ the method of self-perpetuation prevalent in the private sector. The University of Alabama, the University of Delaware, and the University of Vermont are examples.

In a few states the legislature has the responsibility for appointing one or two trustees. In Pennsylvania, the speaker of the house and the president pro tem of the senate each appoint some trustees to the board of the University of Pittsburgh.

Election. Public elections occur most frequently in the public two-year college sector. In 20 states, trustees of these institutions are elected by the public in local elections.* In Colorado, Illinois, Michigan, Nebraska, and Nevada trustees for the universities are chosen by the electorate in state or district-wide elections.

Legislative elections

In Minnesota, New York (regents only), North Carolina,and South Carolina, the majority of university trustees are elected by the legislature.

Finally, a small number (less than three percent) of the trustees in public institutions are elected by alumni or other special groups.

By Virtue of Position (Ex-Officio). The most common official designated as a member of public governing boards is the governor. However, there are over a dozen states and many more institutions that have particular clauses in their legislation or in institutional charters that require a public official other than the governor on boards of trustees. In Rhode Island, two legislators are on the board of regents, and in Wisconsin the president of the Board of Vocational, Technical, and Adult Education is on the board of regents. Other *ex officio* members of state university boards include the commissioner of public health (University of Massachusetts), the commis-

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*In several states there are multiple selection methods. For example, in Massachusetts trustees governing community colleges are appointed; trustees governing vocational-technical schools are elected.

"Often. . . appointment of trustees is part of the political patronage process"

sioner of cultural services (University of Maine), and the master of the state Grange (University of Delaware), usually with full voting privileges.

The Role of Tradition

The two major selection methods—appointment and election—often derive from the political traditions of a state or community. In a few cases, extensive informal screening of candidates precedes the appointment. Often, however, the appointment of trustees is part of the political patronage process. Where trustees are elected, political parties sometimes carefully screen their trustee nominees, but otherwise open primaries and contested elections prevail.

In light of the great diversity of existing methods of selection of public college and university trustees, there is an evident need for general principles and procedures that can be widely applied. The 18 recommendations that follow were designed by the Commission to serve as guidelines to good practice with sensitivity to diverse traditions, and with the overall aim of assuring:

—trustees of high ability and commitment

—board autonomy to determine institutional policies

—the balance and diversity necessary to reflect societal concerns

—the legitimacy to make their decisions effective.

The Commission recognizes there is no single way to go about the selection of trustees. Governors and other appointing authorities, legislators, and trustees are urged to analyze critically the recommendations to determine their application to the institution's current needs and traditions.

Recommendations of the National Commission

Recommendation 1:

Trustees of public governing boards should be appointed by the governor or other established authority from a list of nominees who have been carefully screened by a special committee.

Recommendation 2:

A nominating committee for each institution should be appointed by the governor. It should consist of at least five people and its composition should take into account the diversity of the state, region, or local community the institution primarily serves.

Recommendation 3:

The nominating committee should have carefully delineated responsibilities. Among these should be (a) to assess board membership needs in terms of background, skills and diversity (ethnic, racial, sexual, geographic, social, and political); (b) to consult with trustees and the chief executive; (c) to determine which of the basic board responsibilities needs to be stressed in a given appointment and balance this need with the assessment of the board; (d) to conduct a broad search for qualified candidates; (e) to screen candidates for nomination, including review of trustees eligible for reappointment.

Recommendation 4:

The search for qualified candidates should be continuous. It should include four steps: (a) Identification of the statutory and other qualifications necessary to be a trustee of each particular institution; (b) Publication of the process (time limits and deadlines) under which the search functions; (c) A broad call for prospective candidates for nomination including consultation with the president, administrators, faculty, students and each board member to ascertain membership needs; (d) Identification of candidates for trusteeship by members of the nominating committee.

How to Order Your Copy of "Trustee Selection Recommendations"

The accompanying article gives in brief form the recommendations on trustee selection for public institutions made by the National Commission. A similar condensed version of the recommendations for private institutions appeared in the November-December *AGB Reports*. For the National Commission's complete recommendations, public or private, write AGB Publications Department, One Dupont Circle, Suite 720, Washington, D.C. 20036.

Specify which of the two books:

Recommendations for Trustee Selection in Public Institutions $5.95

Recommendations for Trustee Selection in Private Institutions $5.95

Recommendation 5:

Qualified candidates should be carefully screened. The screening of qualified candidates should involve at least five steps as follows: (a) analysis of biographical information; (b) review of supporting documents provided by nominators; (c) identification of a group of "finalists" whose personal and professional background and sense of commitment can be probed in more detail; (d) interviews with each of the finalists; (e) preparation of a statement on each person to be recommended specifying why the person would be a good trustee and what particular board needs would be filled by his or her appointment.

Recommendation 6:

The committee should make at least three nominations for each vacancy from which the governor, or other appointing official, must make the appointment.

Recommendation 7:

The state senate should have the opportunity to confirm trustee appointments and should use this opportunity for substantive, nonpartisan review.

Recommendation 8:

New trustees should be provided with a systematic and thorough orientation program.

Recommendation 9:

When elected public officials are members of governing boards, they should be *ex officio* and without voting privileges. Although the Commission is convinced of the potential usefulness and appropriateness of having the views of public officials when boards deliberate, no board should have more than two such officials.

Recommendation 10:

Political party affiliation should not be a criterion for appointment.

Recommendation 11:

There should be no residence requirements which prevent qualified people from serving.

Recommendation 12:

Governing boards should have at least nine voting members whose terms should be appropriately staggered.

Recommendation 13:

Trustees should be appointed for terms of not more than six years and should not serve for more than twelve consecutive years.

Recommendation 14:

Students should not be voting members of the governing boards of the institutions in which they are enrolled.

Recommendation 15:

Faculty members should not be voting members of the governing boards of institutions by which they are employed.

Recommendation 16:

Governing boards should adopt a code of conduct for trustees which specifies board duties and responsibilities and establishes procedures for dealing with potential conflicts of interest.

Recommendation 17:

In states where trustees are elected by the public, nominating committees, as specified in Recommendations 2 through 5, should be appointed to assure that all candidates on the ballot are highly qualified.

Recommendation 18:

Trustee elections should be timed to coincide with other local or general elections.

SAMPLE BOARD PROFILE

Categories	Present Membership 1980	Possible Vacancies By Year		
		1981	1982	1983
Age				
70 and over				
60-69				
50-59				
40-49				
30-39				
Under 30				
Sex				
Female				
Male				
Race				
White				
Black				
Hispanic				
Asian or Pacific Island				
Native American or Alaskan Native				
Area of Expertise				
Administration				
Agriculture				
Business				
Education				
Finance				
Fundraising				
Government				
Health/Medical				
Legal				
Marketing				
Physical Plant				
Public Policy				
Public Relations				
Religion				
Other				
Geographical Distribution				
Rural				
Suburban				
Urban				
Out-of-state				
College Relationship				
Alumni				
Parents				
Other				
Financial Position				
Independent				
Salaried				
Other				
Length of Service				
Over 10 years				
5-10 years				
2-4 years				
one year or less				

HIGHER EDUCATION AND STATE ECONOMIC GROWTH: A STRATEGY FOR STRENGTHENING THE RESEARCH, PUBLIC SERVICE AND JOB TRAINING CAPABILITIES OF COLLEGES AND UNIVERSITIES

STATE OF MICHIGAN

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HIGHER EDUCATION AND STATE ECONOMIC GROWTH:

A STRATEGY FOR STRENGTHENING THE RESEARCH, PUBLIC SERVICE AND JOB TRAINING CAPABILITIES OF COLLEGES AND UNIVERSITIES

A Staff Report

Prepared for the

Review Panel on Economic Development, Research and Public Service

September, 1984

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SECTION ONE:

A STRATEGY FOR STRENGTHENING THE ROLE OF RESEARCH INSTITUTIONS IN ECONOMIC DEVELOPMENT

INTRODUCTION

Michigan has long had an economy subject to sharper expansions and contractions than the national economy due to its concentration in durable goods and manufacturing. In the last two decades, Michigan's economy has been damaged by both increasingly extreme business cycles and significant loss of industrial competitive position as many Michigan firms lost ground to their competitors in other states and nations.

The state's system of higher education has been a chief victim of those cyclical and structural impacts on the economy. In the decade prior to 1983, the state devoted a shrinking share of its resources to higher education while, at the same time, the university system was being asked to do more to aid the state's economic development. The imperiled strength of Michigan's economy makes it more important than ever for citizens to understand the process of economic development and the positive role that higher education can play in that process. This introduction discusses linkages between the mission of the state's higher education system and the goal of economic revitalization.

Expanding the Base

Economic development in Michigan is a process that affects every part of the economy--factories, farms, retail shops, construction, professional services, and even the quality of such public services as schools and roads. Yet the widespread character of economic development makes it difficult to separate out the causes of this process from its effects.

The basic objective of Michigan's economic development is to increase the state's ability to sell its products and services to other areas of the country and the world. Those firms and industries exporting products outside the state and those firms selling parts and business services to firms that export, together, form Michigan's economic base.

The state can expand its economic base by developing new industries or expanding those base industries that already exist. An expanding economic base brings more dollars into the state which can then be circulated through the local market economy.

The economic base of Michigan includes forest products, agriculture, processed food, furniture, steel, and a great deal of machinery, particularly cars and trucks. Michigan's economy employs about 3.9 million people. Jobs in manufacturing, agriculture and forestry form the base that is the foundation of the state's economy.

The Changed Role of Higher Education: Examples from Massachusetts and California

The last eighty years have seen a changed relationship between higher education and the American economy. Inventing new technologies and products is beyond the scope of most self-trained inventors working alone. Discoveries today are more likely to be products of teams of well-educated experts from a variety of backgrounds focusing on fundamental scientific and production problems. The federal government and universities heavily subsidize basic scientific research whose eventual commercial applications have been significant but hard to predict in advance. The rate and sophistication of new technologies has increased dramatically, along with the rate at which these technologies are deployed.

Today, universities have become large enterprises dependent on government, corporations, and alumni support to finance their widely expanded operations. In return, government and corporations have increasingly looked to major research universities and their associated labs and institutes for the new knowledge and technologies necessary to maintain America's competitive position in world markets. Universities have been transformed well beyond their traditional role of providing trained personnel. Universities are now responsible for much of the basic and applied research that will lead to new products and processes.

Massachusetts and California offer two dramatic examples of how excellent research universities (at the Massachusetts Institute of Technology and Stanford University) helped transform their state economies. By 1960 Massachusetts had almost lost the textile and shoe industries that were important parts of the state's economic base. Today, the cluster of computer companies around Boston's Route 128 has kept state unemployment rates consistently below the national average. Similarly, in twenty-five years, Santa Clara County, California, has become the heart of "Silicon Valley." Historians have documented the relationship of post-World War II electronics research at MIT and its affiliated Lincoln Labs to the founding, in 1957, of Digital Equipment and the minicomputer industry. Similarly, Frederick Turman at Stanford built an engineering school that led to the founding of Hewlitt-Packard and other spin-off firms that attracted the nation's semiconductor industry to California.

Both regions share several characteristics in this development process. First, key engineering departments at MIT and Stanford were of high quality, doing research at the cutting edge of new technology. Second, both schools were strongly oriented to the application of ideas by encouraging faculty to transfer technology out of the university and into the marketplace, sometimes by taking it there themselves. Third, universities in both states were successful in getting federal research contracts and venture capital, both of which stimulated the translation of laboratory ideas into commercial products. These latter factors have, themselves, been helped by the research excellence and the entrepreneurial environment within the two universities.

Revitalizing Michigan's Economic Base

The lesson of the development of Route 128 and Silicon Valley is not that Michigan, at this late date, should commit itself to entering the field of minicomputers, electronics or silicon semiconductors. To try to replicate those industries with their particular suppliers, university programs, specialized labor pools, and customized business services would be so costly as to saddle entrepreneurs in those areas with uncompetitive costs. Rather, the lesson of the Massachusetts and California economies is to focus on the technology and cutting edge scientific engineering research that has the greatest potential to revitalize the state's economic base.

A hard assessment of the competitive position of Michigan's manufacturing base points to certain key factors beyond the control of state government or any private corporation. Our state's economic heritage is concentrated in durable goods manufacturing, a sector subject to more international competition and slower growth than the newer high tech industries of Massachusetts and California. Michigan has also been particularly vulnerable to federal fiscal and monetary policies. Tight money and high interest rates have been major causes of an overvalued dollar, making imported manufactured goods cheaper, while raising the price of the credit used by most consumers to buy durable goods. In addition, while Massachusetts and California greatly benefited from heavy defense support for basic research in electronics, there has been comparatively little federal support for basic research in areas applicable to the production problems of traditional industries. However, taken together, federal policies, Michigan's particular industrial mix, and other external factors do not fully explain a state economy growing more slowly than the nation's.

Job growth will continue to be slower in Michigan than in lower-cost locations unless Michigan can speed up the technological innovation of its base industries. Only by increasing the amount of research and the deployment of technology will the state's workers and businesses develop the increased productivity that justifies higher incomes and increased market shares.

If Michigan is to succeed, it must not only become a place where new products are created, it must also be a place where research and new technology are rapidly applied to the design and production of existing products. The state's automotive economy provides jobs for about 550,000 citizens, about half the jobs in the state's economic base. The nature and production of motor vehicles will continue to be subject to enormous technological improvement in ways that shoes and textiles never were. The electronics revolution in computers is just beginning to be applied to the manufacturing process itself.

This inevitable infusion of technology into traditional industries has two important implications for Michigan's economic future. First, if the people of Michigan--from workers through top management--are able to develop, master, and apply continuously-changing technology, the state can hold onto a significant portion of the international automobile industry. Second, a rapidly modernizing automotive industry can be the source of Michigan's emergence as the nation's major source of new industrial technology.

The state is also developing an impressive cluster of firms, many of them young and small, in such fields as robotics, control software, machine vision, computer-aided design and manufacture, electronic sensors and new industrial materials. Several other parts of the nation and world are actively competing to become sources of technology for the "factory of the future." There is every reason for Michigan to capture this new industry as effectively as it captured the automotive industry eighty years ago.

Other related industries will be important as well. The state can hope to combine its mechanical skills with the research of its fine medical complexes to develop new products in the field of biomedical instrumentation. The state can also apply its growing research capability in biotechnology to create new products from the raw materials of its farms and forests.

While the direction Michigan takes in the technological adaptation of its base industries should be different from the direction taken by other states, a great deal can be learned from the ways that other states have developed their own economies. Whether we are improving existing products and processes or developing new ones, our institutions of higher education must play a critical role.

Efforts to use industrial technology to revitalize our state's economic base should be disciplined by two lessons drawn from the Massachusetts and California experience. First, only top-rank schools have provided a significant stimulus to innovation. Second, those centers of excellence must be narrow but high points of academic excellence that promise to relate to something important in the future economy.

A healthy system of higher education is important if Michigan is to be an attractive place to live and work. This alone justifies continued support for a diverse system of colleges and universities. Yet, if recent economic history is any guide, higher education has an equally important and more strategic role to play. It must help develop new technologies in areas critical to the preservation and expansion of the state's economic base and it must help transfer those technologies into the state's economy. To assist higher education in playing this role, the state must identify, without sentimentality, existing foundations of strength, It must then selectively build on those foundations new "steeples of excellence" in areas that are most promising for the economic future of the state.

What follows is a discussion of where these opportunities exist and what actions should be taken to maximize those opportunities which have the greatest potential for economic payback.

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INDICATORS OF RESEARCH EXCELLENCE

Research and Development Funding. Nationally, the degree to which universities garner and apply resources in support of research is used to indicate comparative institutional excellence. The federal government is the primary source of support for university-based research, providing 66 percent nationally. Universities themselves provide 23 percent, industry provides about 4 percent and other, mostly non-profit organizations, provide the remaining 7 percent. The United States Department of Health and Human Services is by far the largest research sponsor, providing about 54 percent of the total in 1982. The Department of Defense provided only about 11 percent that same year. Eighty-five percent of the federally sponsored research is conducted in 100 institutions.

The National Science Foundation (NSF) collects self-report statistics and publishes annual rankings of universities based on the strength of their research financing. These comparisons of research spending take into account two variables: total institutional dollars spent on research and total federal research dollars garnered by respondent institutions. NSF data for FY 1982 reveal that Michigan research universities occupy competitive positions relative to the nearly six hundred institutions surveyed. Michigan's national ratings are outlined in Table I.

Table I
TOTAL R & D EXPENDITURES, RANKINGS OF MICHIGAN
INSTITUTIONS IN COMPARISON TO 563 UNIVERSITIES AND COLLEGES,
FISCAL YEAR 1982

	University of Michigan (U of M)		Michigan State University (MSU)		Wayne State University (WSU)		Michigan Technological University (MTU)	
	Rank	Millions	Rank	Millions	Rank	Millions	Rank	Millions
Total	#9	$119.9	#25	$71.9	#93	$21.5	#152	$8.7
Federal	#15	74.6	#35	38.3	#95	12.9	#184	3.4

Source: National Science Foundation (NSF 84-308) "Academic Science/Engineering: R & D Fiscal Year 1982," pages 31-42.

It is important to note that Table I represents data from both public and private doctoral-granting institutions. On the average, private universities are more generously funded than their public peers. Therefore, by narrowing this dollar comparison to publicly-funded institutions, the already impressive status of Michigan's research universities is enhanced. As Table II shows, three of Michigan's major universities rank in the top two-thirds when the research expenditures of one hundred comparable institutions are tallied.

Table II
TOTAL R & D EXPENDITURES, RANKS OF MICHIGAN INSTITUTIONS IN COMPARISON TO 100 PUBLIC UNIVERSITIES AND COLLEGES, FISCAL YEAR 1982

Michigan Institutions	Ranks Relative to Public and Private Institutions	Ranks Relative to Public Institutions Only
U of M	#9	#5
MSU	#25	#16
WSU	#93	#64

Source: National Science Foundation (NSF 84-308) "Academic Science/Engineering: R & D Fiscal Year 1982," pages 53-56.

Further analysis of NSF data pinpoints specific fields where Michigan research universities excel, based on their receipt of R & D funds from various sponsors.

Table III

MICHIGAN INSTITUTIONS COMPARED TO 100 COLLEGES AND UNIVERSITIES, RANKINGS BASED ON TOTAL R & D EXPENDITURES IN SELECTED FIELDS AND DISCIPLINES, FISCAL YEAR 1982

Disciplines/	Institutions and Ranks*				Specific Areas of
Fields	U of M	MSU	WSU	MTU	Research Strength
Engineering (Overall)	#12	#87	#92	#50	Mechanical and Electrical Engineering
Physical Sciences (Overall)	#30	#17	#56	--	
o Chemistry	#53	#41	#39	--	
o Physics	#20	#41	#74	#85	
Environmental Sciences (Overall)	#24	#91	--	--	Atmospheric and Earth Sciences
Math/Computer (Overall)	#22	#60	--	--	
o Mathematics	#27	#61	--	--	
o Computer Sciences	#20	#52	#83	--	
Live Sciences (Overall)	#14	#19	#92	--	
o Biological Sciences	#9	#23	#67	--	
o Medical Sciences	#13	#78	#74	--	
Social Sciences (Overall)	#1	#35	--	--	Economics, Political Science and Sociology
o Psychology	31	339	--	--	

Source: National Science Foundation (NSF 84-308) "Academic Science/Engineering: R & D Fiscal Year 1982," pages 81-114.

*Dashes indicate that institution ranked below the first 100 institutions.

In the last five years, federal R & D funding has declined. The university research enterprise is especially vulnerable to these fluctuations in the nondefense federal budget because of their reliance on nationally-sponsored research. A recent analysis of data for engineering, biology and the physical sciences showed that federal R & D spending patterns strongly affected the size of professional R & D staffs, the volume of Ph.D. production and the size of graduate enrollments. In engineering these effects were stronger than in either of the other fields.2

As the competition for ever-scarcer federal research funds increases, the quality of an institution's research work force will become a more powerful determinant of its ability to procure grant funds. Specifically, research awards are based on a process of peer review. Quality faculty, working in supportive environments and having proven track records, gain votes of confidence during peer review sessions. It is no surprise, therefore, that institutions whose faculty members are held in esteem by their peers enjoy higher levels of research support than competing institutions. Indicators of research excellence which are based on the reputations of faculty are discussed below.

Faculty Quality. Beyond research expenditures, university excellence is also indicated by polling graduate faculty across the country about the reputation of faculty in other institutions. In a 1982 survey published by the National Academy of Sciences (NAS), faculty across the country ranked the quality of their peers in Ph.D. research programs. NAS's findings covered 90 percent of the Ph.D. programs in thirty-two disciplines. Although based on subjective judgments, NAS's rankings show that the scholars surveyed agreed on the excellence of their Michigan peers. Table IV isolates the rankings for U of M, MSU and WSU.

Table IV
GRADUATE FACULTY QUALITY RANKINGS OF MICHIGAN INSTITUTIONS, RANKING AMONG ALL PUBLIC AND PRIVATE INSTITUTIONS
FISCAL YEAR 1981

Broad Areas & Disciplines of Graduate Programs	U of M	MSU	WSU
Biological Sciences			
Biochemistry	#19-21	#31-33	#65-67
Botany	# 8-9	#13-17	--
Cell/Molec Biology	#28-32	#28-32	#71-74
Microbiology	#17-21	#32-34	#51-54
Physiology	# 7-8	#22-25	#66-72
Zoology	--	#25-26	#65-66
Engineering			
Chemical	#17-18	#61	#66-69
Civil	#10-13	#40-42	#74
Electrical	# 9	#39-40	#71-73
Mechanical	# 7-8	#36-41	#55-58
Humanities			
Art History	# 8-9	--	--
Classics	# 5	--	--
English	#16	#34-38	#64-67
French	# 7-9	#37-39	--
German	#15	--	--
Linguistics	#21-23	--	--
Music	# 6-9	#43-44	--
Philosophy	# 9	#55-56	#58-62
Spanish	# 6		
Mathematical & Physical Science			
Chemistry	#31-34	#24-26	#49-55
Computer Sciences	--	#49-50	--
Geosciences	#24-26	#63-67	--
Mathematics	#11-13	#47-54	#73-77
Physics	#23	#28	#91-93
Social and Behavioral Sciences			
Anthropology	# 2-3	#33-36	#56-61
Economics	#15	#26-28	#51-55
Geography	#20-22	#23-24	--
History	# 5-7	#48-52	#75-80
Political Science	# 4-5	#31-33	--
Psychology	# 3-4	#41-45	#77-87
Sociology	# 3-4	#31-33	#76-79

Source: "An Assessment of Research-Doctorate Programs in the United States," Vols. I-V, National Academy of Sciences (1982). (Rankings tabulated by Alan R. Price, Ph.D., The University of Michigan.)

Outstanding faculty are in high demand nationally. This is especially true in science and engineering, because students and society have elevated the demand for these particular instructional and research capabilities.

As a result of fluctuating state appropriations, Michigan is losing its ability to attract and retain key faculty; at the same time, other states are spending increased resources to recruit human talent. States such as New York, Texas, Massachusetts, California, North Carolina, Georgia, Tennessee and Florida are increasing their public and private support for salaries, salary supplements, graduate assistants and special equipment. Consequently, signs of a faculty exodus are becoming evident as competing institutions and private industry succeed in luring faculty in areas of scarce talent away from Michigan. Without a signal that Michigan places a high value on stable institutional funding, faculty in areas tied to economic development will surely relocate to more predictable and supportive environments.

The first wave of serious faculty relocations has been recorded by university administrators. Repeatedly, during exit interviews, star-quality faculty report the attractiveness of resources offered by other states. Tennessee, based on its publicly-funded Centers of Excellence, recently lured from Michigan a top theoretical nuclear physicist, a top computer design specialist, several anatomy faculty and--in veterinary medicine--a dean and two of his senior faculty.

Other losses accompany faculty departures. First, research funding is foregone when grant recipients move elsewhere. University officials reported, for example, that top biotechnology researchers can attract $200,000-$500,000 per year in outside funding, as well as salaries for several Ph.D. graduate students and postdoctoral fellows. Second, laboratories extensively outfitted for a particular project must be re-tooled for use by other researchers, at a loss to the original institution. The overall cost of faculty departures can rise to millions of dollars per year.

Should research faculty begin to emigrate from Michigan in large numbers, serious negative consequences would accrue to the state's national image. Members of review panels awarding federal grants would undoubtedly question the research capabilities of individuals remaining in Michigan. Potential faculty and administrators would likely decline appointments to positions in Michigan, fearing association with faltering institutions. Less mobile faculty would lose confidence that their career possibilities can be enhanced by remaining in Michigan. In sum, a noticeable faculty exodus would jeopardize Michigan's ability to attract research revenues and brainpower.

Quality Graduate Students. Ph.D graduate students are the research leaders of tomorrow. Just as concern is focused on attracting and retaining top faculty, so should Michigan attempt to recruit and retain star quality graduate students.

States investing large sums of money in their research universities have made the competition for promising young graduate students keener than ever before. Without strong state support for graduate fellowships, Michigan institutions must expend large portions of their institutional funds for graduate student support. Even then, in light of strained budgets, Michigan stands to lose more and more young scholars to industry or to institutions in other states with fuller financial aid packages. A decline in federal and foundation fellowships limits the ability of all institutions to enroll the best apprentice scholars.

Informal surveys[3] of department chairpersons in three Michigan research universities pointed out that, although today's graduate students are qualitatively equal to their predecessors, recruitment poses several new problems, especially in large major departments. The most talented graduate students apply only to institutions having the best faculty, the best equipment and the best reputations. All reputational and qualitative factors being equal, recruitment success hinges on marginal factors such as costs and the terms of financial aid.

Because constrained funding has resulted in outmoded equipment and reduced professional staffing in Michigan, department chairs report the need to spend more time convincing graduate students to enroll in their programs. Whereas private institutions employ professional staff for these purposes, public institutions are forced to rely on faculty to recruit. This extra responsibility takes a toll. "Time spent in recruitment cannot be spent in research, in writing for a national audience or funding proposals, or in working closely with graduate students to maintain and mold their unique capabilities. These subtle problems affect many graduate programs in a very short time as word circulates in professional arenas that something is amiss. . . ."[4]

Added to the personal time needed to attract top students is the problem of financial support. In contrast to the full tuition waivers offered by many competing schools, Michigan's research institutions can only reduce out-of-state tuition to in-state levels. In contrast to the multiple-year commitments offered by many competing schools, several Michigan institutions reported problems offering support (such as assistantships) for more than one year at a time. Finally, in the physical sciences, a lack of research fellowships means that top students cannot be lured on the basis that they will be relieved from teaching responsibilities.

Overall, competition for outstanding graduate students involves factors of supply and demand. In some cases, competition stems from another university or academic market. In other cases, the private sector bids up the price of employment. In all cases, federal grants, competitive faculty, and state-of-the-art equipment can enhance the ability of departments to compete effectively for the best student apprentices.

Special Research Equipment and Facilities. The condition of equipment influences the volume of scholarly output, the quality of instruction, as well as the institution's ability to attract and retain productive researchers. In the sciences and engineering, antiquated equipment can lead to a loss of federal and industry grants.

A recent national report compares the laboratory equipment used by researchers at The University of Michigan, 15 other universities, 6 governmental labs and 9 commercial labs.5 The study found that the median age of university laboratory equipment is twice that of commercial facilities. The study observed, "As a result, many university researchers work with inadequate tools that impair the pace of research, force closure of lines of inquiry, strain operations and maintenance budgets, and compromise the advanced education of graduate students. . . .The best equipped industrial laboratories surpass almost all university laboratories visited. . . .The ivory towers are now in industry." This report (see Appendix A) calls for enhanced federal funding for equipment.

Laboratory equipment dilemmas should be discussed on three levels. On a routine basis, existing equipment must be maintained in accurate, working order or replaced. From an instructional perspective, deteriorated or obsolete equipment represents an ongoing concern because graduates should be familiar with the state-of-the-art equipment used by industry employers. In addition, the stock of major equipment devoted to special purposes (such as biomedical research) needs continual enhancement, because of the accelerated pace at which new technologies and methodologies emerge.

This discussion is limited to the equipment and facilities needed for special purpose research which contributes directly to economic development. Recommendations on routine equipment replacement costs and instructional equipment needs will be included in discussions of capital outlay and deferred maintenance.

In general, estimates of equipment needs are difficult to calculate and validate. This task becomes more complex when major (i.e., costly and specialized) equipment costs must be dissected from overall equipment and facility needs. However, existing indicators of overall needs serve as a point of departure in determining special purpose equipment needs.

Only one survey of equipment demand is available--a $78 million inventory of engineering equipment requests compiled by the Michigan Society of Professional Engineers. This survey (see Appendix B), covering public and private institutions, has not been validated. Another indicator of the magnitude of the system's demand for new equipment is the total equipment special funding requests submitted as part of the Executive Budget development process. A total of $28 million in equipment requests were submitted in FY 1985, the largest single category of special funding requests. Like the other, this source of information lacks validation and fails to distinguish between major and routine equipment purchases.

Major equipment acquisition is not routinely funded in the capital outlay or operating appropriations acts. Therefore, clear estimates of the demand for major equipment are frequently clouded by their inclusion in capital outlay funding requests. While the state typically equips the facilities it constructs, this is only one-time financing. New equipment purchases or equipment replacement must be financed by general operating funds or restricted sources of financing obtained by the institution.

Unless major equipment and construction come to be evaluated separately and systematically, institutions will continue to embed equipment funding in capital outlay requests.

State Appropriations. A state's image is shaped by the public support which is manifested in state appropriations. Stable, adequate support levels enhance the credibility of the state and its research institutions. Years of unstable state appropriations, in tandem with years of declining federal support, have exacted a serious toll on the image, the infrastructure and the individuals associated with Michigan's research endeavors. As appropriations have fluctuated downward, decision makers in research universities have managed their affairs by thinly spreading available funds over a large landscape of demands.

When compared to peer institutions in other states, the underfunding of Michigan research universities becomes clear. Tables V and VI (using headcount and FTE, respectively) show that the level of state funding for Michigan's research universities is below the average Midwestern level of support for comparable public universities.

Table V
PER HEADCOUNT STUDENT, STATE GENERAL FUND OPERATING APPROPRIATIONS, BY INSTITUTIONAL CATEGORY (CARNEGIE)**

Public Four-Year Carnegie Classification System	1983-84 Midwest Regional Average		1983-84 Michigan Institutional Average		Michigan Difference	
	Campus Only	Total*	Campus Only	Total*	Campus Only	Total
Research I	$3,528	$4,546	$2,657	$4,065	$-871	$-481
Research II	2,932	3,832	2,759	3,584	-179	-248
Doctoral I	2,602	2,608	N.A.	N.A.	N.A.	N.A.
Doctoral II	2,318	2,318	2,354	2,354	+36	+36
Compre. I	2,133	2,133	2,156	2,156	+23	+23
Compre. II	2,296	2,296	2,067	2,067	-229	-229
Liberal Arts I	No public schools listed					
Liberal Arts II	No public schools listed					

No community college comparison computed to date.

Overall Public Four-Year Average	$2,721	$3,117	$2,425	$3,014	$-296	$-103

*Total includes state funding for adjunct activities such as extension operations, hospitals, etc.

**Utilizing 1983-84 M. M. Chambers State Higher Education Operating Appropriation Data and 1982-83 NCES Headcount Enrollment Data by 1976-77 Carnegie Commission Institution Type Taxonomy.

Table VI
PUBLIC FOUR-YEAR GENERAL FUND AND TUITION REVENUES, PER FULLTIME EQUATED UNDERGRADUATE STUDENT

Carnegie Classification	Midwest			Michigan			
	1983-84 G. F. Approp. (Total)	1982-83 U.G. T & F Average (F.T.)	Combined Total	1983-84 G. F. Approp. (Total)	1982-83 U.G. T & F Average (F.T.)	Combined Total	Total Difference
Research I	$4,546	$1,413	$5,959	$4,065	$1,761	$5,826	$-133
Research II	3,832	1,426	5,258	3,584	1,648	5,232	-26
Doctoral I	2,608	1,329	3,937	NA	NA	NA	NA
Doctoral II	2,318	1,463	3,781	2,354	1,290	3,644	-13[illegible]
Compre. I	2,133	1,145	3.278	2,156	1,372	3,528	+250
Compre. II	2,296	986	3,282	2,067	1,180	3,247	-35
Liberal Arts I	No public schools listed						
Liberal Arts II	No public schools listed						

Key: Approp. = Appropriation
F.T. = Fulltime
G. F. = General Fund
T & F = Tuition and Fees
U.G. = Undergraduate

The relative underfunding of Michigan research universities is exacerbated by a heightened inter-state competition for intellectual resources. Numerous other states are escalating their expenditures for research faculty, equipment and overall graduate programming. The quality of new knowledge emerging from Michigan's campuses is a direct result of the quality of research-related inputs (funds, human capital, physical plant and instruments). Michigan will lose its competitive advantage in the marketplace of knowledge and technology unless its investments in research are targeted, increased and stabilized.

RECOMMENDATIONS TO MAINTAIN RESEARCH EXCELLENCE THROUGH A FIVE-PART RESEARCH EXCELLENCE FUND

The six recommendations which follow comprise a strategy for preserving research excellence. To become Research Excellence Fund grantees, institutions would submit formal proposals to the Department of Commerce for screening based on compatibility with state economic development goals. Priority funding would go to research universities.

Appropriate proposals would then be reviewed through a process of technical evaluation modeled on the National Science Foundation's peer review process. A peer review by individuals knowledgeable in the fields under consideration, and independent of Michigan's research universities, would ensure that projects are selected without regard to institutional affiliation or other parochial biases. Allocations to specific universities would be based on two-stage approval of their proposals.

Research Excellence Funding should be distributed in support of proposals involving some or all of the project elements described below:

1.1 STATE SUPPORT FOR CENTERS OF ACADEMIC EXCELLENCE. To enhance the standing and strength of advanced scholarship in Michigan, the Review Panel recommends an annual appropriation of $15 million to support programs of scholarly excellence. Funds would be targeted, based on national rankings of R & D excellence, at programs having a demonstrable likelihood of achieving reputations of regional or national excellence during a 3-to-5-year funding period. New and continuing applications for funding would be reviewed on a competitive basis. Major review criteria would include: the probability of achieving desired prominence, compatibility with state economic development goals, potential for improving the state's research base and potential for attracting nationally/internationally recognized faculty and graduate students. Michigan Centers of Excellence would not be limited to science and engineering; creative endeavors in the arts and humanities would also be supported and encouraged.

1.2 STATE MATCH FOR INDIRECT COST FUNDS. Consistent with the principle of increasing existing strengths, the Review Panel recommends that funds be appropriated on an annual basis to serve as a match for the indirect cost funds procured by universities carrying out sponsored research. 1983 data indicate that (given indirect cost funding totaling $40.1 million) a 25 percent state match would provide institutions with a reward for research totaling $10 million. By receiving state incentive dollars for indirect cost dollars, institutions would enjoy a larger pool of money for use in increasing the volume of their research funding.

1.3 STATE MATCH FOR ENDOWED FACULTY POSITIONS. To attract outstanding researchers and to prevent a migration of researchers from Michigan, the Review Panel recommends a program whereby private donations raised by institutions would serve as match for publicly-appropriated funds. This recommendation will involve a $15 million, one-time, state appropriation (to be matched on a dollar-for-dollar basis by institutions) for use in financing special faculty salary arrangements. One million dollars in endowment funds could be procured by combining a $500,000 minimum institutional match with an equal amount of state funding. Match requirements could be waived or relaxed for promising areas whose economic payoffs and scholarly value have yet to be established. Under this proposal, public and private dollars would combine in a trust fund to perpetually endow faculty positions in targeted disciplines. Endowed chairholders would be required to engage in specified public service activities.

This endowment partnership has received the support of university decision makers who attest to the value of using state funds both as a magnet for private contributions and as proof that Michigan is committed to a thriving research enterprise.

1.4 GRADUATE STUDENT SUPPORT. The Review Panel recommends an annual set-aside of state fellowship funds to support graduate students in engineering, the sciences and the humanities. In addition, the Review Panel encourages institutional leaders to initiate full tuition waiver programs to make a graduate education in Michigan affordable for larger numbers of sought-after students.

1.5 APPROPRIATION FOR MAJOR EQUIPMENT. Currently, major equipment requests are handled in a way which hinders sound need-analysis and prevents prompt purchases. Lacking a fund for major equipment, institutions tend to embed equipment needs in other requests. Verifiable estimates of major equipment needs are, therefore, difficult to calculate. The Review Panel recommends that a state fund be created to meet the major equipment needs of researchers. Funding would be used to acquire special purpose equipment for use in projects which support state economic development goals. The Review Panel recommends an initial appropriation of $10 million for this purpose, with the understanding that unused funds would lapse if sufficiently worthy projects are not identified.

Examples of priority projects might include equipment for a solid-state electronics fabrication facility, expensive electron microscopes or high field, double-focusing spectrometers. **Priority should be given to equipment requests which are opportunity-based; i.e., which hold great promise for economic development if promptly approved.**

1.6 MAJOR EQUIPMENT FUND. The Review Panel also recommends that a major equipment fund be established in the Department of Management and Budget (DMB) and that proposals for special acquisitions be evaluated by that agency (in collaboration with the Department of Commerce). The Joint Capital Outlay Committee (JCOC) should act on special equipment recommendations put forth by the two departments within a set number of days.

SECTION TWO:

A STRATEGY FOR IMPROVING THE DIFFUSION OF NEW KNOWLEDGE THROUGH PUBLIC SERVICE AND TECHNOLOGY TRANSFER

Although research and development (R & D) activities plant he seeds of innovation, the ultimate impact of technology is in its use and commercialization. Economists consider the most important determinant of growth to be the pace at which new knowledge--technology--is diffused and used in the marketplace.

This section focuses on diffusion or dissemination; i.e., that part of the economic development process which takes place after discovery has been completed and before an idea is actually commercialized. Diffusion refers to the flow of advice and information which translates technical findings into a consumable form for use in the marketplace.

The diffusion of new knowledge occurs in several ways, through: (1) instruction; (2) public service; (3) technology transfer and entrepreneurship; and (4) business/academic linkages. In each of these cases, the diffusion process is driven by high quality research and excellent research faculty. If done well, diffusion results in a high volume of innovation, the establishment of new businesses, increased productivity on the part of existing businesses, better local problem-solving and overall economic growth.

DIFFUSION THROUGH INSIGHTFUL INSTRUCTION

College instruction produces graduates who take jobs in government, industry and at other educational institutions. College graduates bring to their jobs the basic knowledge and state-of-the-art insights learned from teaching faculty. The more that faculty research activity can elevate the content of instruction, the more that employed college graduates can transport new ideas and innovations from the campus to the work site. When business and government leaders are allowed to participate in the instructional process, students are even better equipped to communicate new concepts to employers.

DIFFUSION THROUGH EXPANDED PUBLIC SERVICE

Public service activities are undertaken based on the belief that state-supported higher education institutions have a public duty to share advanced knowledge and to work on problems of local and regional interest. Public service contributes to knowledge diffusion by bringing faculty expertise to bear on problems confronting communities surrounding campuses.

Although higher education institutions in Michigan contribute significantly to the public service ideal, this work is usually defined in noneconomic terms; i.e., in terms of institutional committee work and work with civic/religious organizations. Service provided in accordance with this traditional definition is accomplished with higher education operating at an arm's length from for-profit entities. The Cooperative Extension

Service and the Agricultural Experiment Stations administered by Michigan State University are examples of nonprofit public service activities.

This limited service orientation produces a gap between the campus and the business community. The negative social consequences of this distant relationship are well described by the Center for Research on Utilization of Scientific Knowledge:[6]

> "A struggle goes on between teaching and research . . . which virtually crowds out serious consideration of the university's role as the problem-solver and expert for the greater society. Meanwhile, the average citizen. . . insistently asks when the professors are going to stop 'studying' the problems and start 'helping' the society by using what they know."

For Michigan's long-term prosperity, there is a valid public purpose served by including for-profit companies as public service recipients. While industry and academia are separate, there are mutual benefits involved in systematic cooperation: industry needs advice and a rapid infusion of technology; universities need the financial and political support accruing from expanded public service activities.

Table VII presents the three main criteria used to evaluate faculty performance for tenure purposes. Columns C-1 through C-3 of the table reveal distinctions between the various sorts of public service.

Table VII
FACULTY PERFORMANCE MATRIX

A Guide to the Analysis of Faculty Performance in the Areas of Teaching, Scholarship, and Service

	SPHERES OF APPLICATION		
Activity	1 *Academic*	2 *Professional*	3 *Avocational/Citizenship*
TEACHING (Classroom and other activities closely related to instruction)	Credit courses, on and off campus	Professional continuing education and training	Personal interest and leisure courses
SCHOLARSHIP (Research and dissemination of knowledge in publications or other tangible forms)	Publication based on basic or disciplinary research; scholars and students as primary audience	Products of applied research; practitioners as primary audience	Writing about personal experiences, hobbies, and other topics not related to academic or professional duties
SERVICE (Individual effort, group or committee activity, administration)	University administration, committee work, and other responsibilities, identified by organizational level. Contributions to academic societies	Professional practice and service to clients; advisory and consultative services to government or professional agencies and organizations. Contributions to professional societies	Nonprofessional contributions in civil, religious, other activities

Source: Florestano, Patricia S. and Heinbrik, Ralph, "Rewarding Faculty Members for Profession-Related Public Service," Educational Record, Winter, 1984.

Of particular pertinence to economic development are professional public service activities which apply faculty expertise to public sector, business and industry problems through advice and consultion. Such professional public service would contribute greatly to Michigan's current economic and social needs by focusing on activities such as: (1) advice to public and private agencies regarding labor-management strategies; (2) advice to industrial officials regarding problems arising when technology replaces human capital; (3) advice to urban officials regarding how to revitalize inner-city areas, both socially and civically; (4) advice on the best ways for academia and business to build links in the service of economic development; and (5) advice on ways to apply new technologies to problems of urban housing, transportation and pollution control.

Public service, although an important mechanism for diffusing the intellectual outputs of higher education, is given little weight in decisions to award tenure. Increased levels of professional public service will require that institutions build appropriate rewards for these activities into their tenure and promotion policies.

DIFFUSION THROUGH TECHNOLOGY TRANSFER AND ENTREPRENEURSHIP

As part of the diffusion process, technology transfer and entrepreneurship are separate but related activities. Through technology transfer, venture capitalists, entrepreneurs and businesses become aware of knowledge which either merits commercialization or can refine productive operations. Technology transfer makes colleges and universities indispensable resources for new and existing businesses. Through entrepreneurship, faculty seek support to commercialize their own inventions and become either part- or full-time business people. In both cases, the research output of higher education institutions improves the climate for businesses at all stages of development: the mature industry, the evolving firm, the seed firm and the spin-off firm. Small enterprises, unable to establish an independent R & D capability, are especially dependent on technology transfer initiated by academic institutions.

Based on potential access to knowledge and technology, businesses needing to expand or relocate take into account the strengths and reputation of an area's colleges and universities.[7] In this context, technology transfer simply means that new knowledge flows from campuses to businesses through unobstructed channels. States which succeed in mastering the challenges of technology transfer become magnets to businesses.

As the Review Panel examined the potential for successful technology transfer, models in other states were closely scrutinized. It was found, for example, that institutions in other states whose scientific diffusion activities served to attract entrepreneurs had two important attributes in common. First, institutions successful in feeding new knowledge to the business sector had a history of undertaking research on the cutting edge of technology. Second, faculty and administrators in these institutions fostered an entrepreneurial environment--they enthusiastically explored the commercial potential of their own innovations and maintained close connections with businesspeople and financiers.

In Michigan, technology transfer has been supported by the Governor, whose High Technology Task Force recently identified manufacturing technology and biotechnology as target areas for state-supported development. Existing and proposed institutional programs related to these initiatives are sampled below:

- Manufacturing Technology Transfer Programs

  The State Legislature appropriated $17 million to establish the Industrial Technology Institute (ITI) in Ann Arbor to act as a catalyst for the application of advanced technologies in manufacturing. Michigan Technological University has established the Institute for Manufacturing, Productivity and Advanced Computer Technology (IMPACT). Its purpose is to increase manufacturing productivity through computer-aided engineering of materials processing. Ferris State College has proposed a Manufacturing Resource and Production Center (MRPC) which would assist industry in solving manufacturing problems through the application of known technological developments and innovations. The University of Michigan's Center for Research on Integrated Manufacturing (CRIM) consolidates the College of Engineering's activities in robotics, computer engineering, manufacturing engineering and information systems.

- Biotechnology Transfer Programs

  Biotechnology centers tend to be more oriented toward research than technology transfer. At The University of Michigan's Molecular Genetics Center there are approximately 50 people doing genetics research through support and networking. A $16 million molecular genetics institute will soon to be constructed near The University of Michigan. In East Lansing, A Biotechnology Research Center has been approved by the MSU trustees to coordinate and support research programs in areas such as molecular biology, chemical engineering, genetic engineering and the development of new biological processes.

In addition to formal research/technology transfer entities, faculty members on numerous campuses have been designated to assume the role of technology transfer agents. This fetal effort, although well-targeted, needs automation, financial support and systematic expansion throughout the state higher education system.

Academic entrepreneurial activity will require support from state leaders, since institutional policies on proprietary rights frequently stand in the way of commercial ventures. Specifically, the governing boards of Michigan universities hold claim to the proprietary rights of faculty inventions. In addition, proprietary rights are regulated in an inconsistent manner in Michigan. For example, textbooks authored by professors are considered to be faculty property, whereas new products or processes invented in the laboratory are considered the property of the university. Finally, universities require a share of license fees. Before Michigan can enjoy an increase in the number of faculty-managed firms, universities will need to reduce the regulatory barriers associated with proprietary rights.

In this regard, the Review Panel applauds the Legislature for passage of the new state conflict of interest statute. This legislation will remove many of the obstacles previously preventing faculty from commercializing their technology in the state. The new statute will make Michigan more attractive to faculty who own companies and wish to affiliate with a Michigan institution.

Under the former conflict of interest statute, faculty members wishing to contract with a university for research or licensing agreements were required to reduce their university appointments to 60 percent time. The mandate harshly punished faculty with entrepreneurial interests. The new law (Public Act 184 of 1984) mandates full disclosure and allows faculty to initiate relationships with their universities which can lead to new businesses.

The economic potential of faculty entrepreneurship is best exemplified by the experiences of Stanford University and the Massachusetts Institute of Technology (MIT). Silicon Valley and Route 128 are characterized by a proliferation of profitable technology-based enterprises--many of which were established by engineering faculty with the backing of venture capitalists. The spin-off phenomenon (whereby faculty with marketable ideas or employees of firms who wish to "produce a better mousetrap," leave the university or the firm to establish a new, related business) is a frequent occurrence in these areas. Few conflict of interest barriers exist to prevent faculty from functioning with one foot in the business world; academics have more freedom in the marketing and licensing of their inventions.

Like Stanford and MIT, Michigan's four nationally-known research institutions offer entrepreneurs and venture capitalists access to a remarkable amount of science and engineering talent. Already, 31 percent (109 of 352) of Michigan's industrial research and development (R & D) facilities are located in Washtenaw County. This area contains many spin-offs from The University of Michigan. There are also about 76 R & D facilities in Oakland County. This latter cluster is industrial in character, with many facilities devoted to the most advanced manufacturing technologies. Examples include: Industrial Holographics, Inc., GMFanuk (GMF) and Federal Mogul. Nearby Macomb and Wayne Counties add to this industrial research cluster with major facilities such as the GM Technical Center in Warren and Ford's Robotics and Automation Applications Consulting Center in Dearborn.

DIFFUSION THROUGH BUSINESS/ACADEMIC LINKAGES

Stronger university-industry linkages offer benefits to both parties, as well as to the state as a whole. Business and academia are cooperating in a number of ventures throughout the state. A sample of these relationships is discussed below.

The Institute of Science and Technology (IST) at The University of Michigan was created by the State Legislature to serve as a center for problem solving and to conduct studies of industry needs. Originally envisioned as a multiuniversity agency, it became part of The University of Michigan in 1964. The Industrial Development Division (IDD) of IST has provided a major mechanism for tapping into the expertise available at the university. To name just one project, IDD was indispensible in locating a mini-steel mill in Monroe. More recently, a Special Projects Division has been created providing trade adjustment assistance, among other services.

Michigan Technological University (MTU) has long sought close cooperation with Michigan businesses. MTU's engineering curriculum and educational programs support Michigan as a leading manufacturing state; its silvacultural programs support Michigan's forest industries.

Similarly, Ferris State College (FSC) has special ties with Michigan industries in various manufacturing technologies. Like MTU, Ferris has a tradition of hands-on, practical education and problem solving. The other eleven four-year institutions can boast of special linkages to Michigan industry, as well.

State and federal funds have also been appropriated to enhance economic linkages between business and academia. In the wake of recommendations from various study groups, the Michigan Legislature appropriated $1.4 million in support of research grants for economic expansion between 1963 and 1965. Public Act 230 of 1963, appropriated $750,000 for a state research fund, and Public Act 266 of 1965 provided $650,000 to cover the cost of additional research projects. The fund was administered by the former Department of Economic Development in the form of grants to state colleges and universities. Competitive proposals were evaluated by a panel of business and industry executives and recommendations were made to the Governor and Legislature. Monies were released to successful projects by resolution of the Legislature.

Twenty-seven projects were undertaken. There was a long gestation period associated with most. Some, of course, had no issue. There were, however, some notable and long-term benefits. For example, an econometric model of the state was constructed that is still in use for revenue forecasting. Ore-Ida located a processing facility here, at least partly because of a potato processing study. The silvacultural studies led to the Jaako Pyory analysis that ultimately resulted in the Forest Improvement District Act of 1980. Other wood resource studies helped locate paper mills and plywood factories.

Complementing this state program, Congress passed the Technical Services Act (PL 89-182) in 1965 which provided funds to the state to supply scientific and engineering help to business through the universities.

Changes in state and national administrations resulted in the termination of both programs. Almost two decades later, the concept was resurrected in Public Act 175 of 1982. It started as a Technology-Based Innovative Development Fund with around $1.3 million allocated to it. After a series of budget reductions, $440,000 was granted to eight projects through a review panel. The grants funded joint product development efforts by Michigan businesses and colleges. Current funding is $200,000.

Throughout the state system, other mutually-beneficial models for cooperation are evident. For example, industry supports scholarships and fellowships to ensure that a stream of trained graduates is available for the work place. Industry also donates funds to institutions for capital projects and faculty enducements.

Private consulting between a faculty member and business or industry is a prevalent practice. Such arrangements familiarize academics with needs and developments in the business and government sectors. All to rarely, however, are business people, students and faculty encouraged to experience day-to-day operations in other sectors. Allowing business leaders to teach college courses would expose students and faculty to a fresh point of view and would promote entrepreneurial attitudes. Vice versa, faculty internships in business/industry would increase understanding about the private sector and demystify its operations.

Consulting often leads to research contracts between institutions and industries. Wayne State University carries out a high volume of contracted research for industry and, thereby, contributes significantly to advancements in the region. The federal government also provides seed money for cooperative programs, such as the NSF-funded "Michigan Project on Industry-University Cooperation" located in East Lansing.

Research parks represent another mechanism for universities and industry to interact. Parks located near university campuses provide a nutritious environment for the incubation or expansion of firms. A major research park is currently being developed in Oakland County. The Oakland Research Park, about 1,800 acres, is located next to Oakland University at the intersection of I-75 and M-59. A consortium consisting of Oakland University, Oakland Community College, Schostak Brothers and Company, Comerica Inc. and Frankel Associates will develop the park over the next decade. The strong position of the university and community college is very important to this venture.

In order for higher education institutions in Michigan to assume a truly strategic role in economic development, their external relations will have to include a broader gambit of employers and other social connections, such as members of Congress and federal officials. Networking endeavors and personnel exchanges of all sorts hold great promise for improving diffusion through communication and familiarity.

RECOMMENDATIONS FOR IMPROVING DIFFUSION AND ACADEMIC ENTREPRENEURSHIP

2.1 EXPANDED PUBLIC SERVICE. The Review Panel recommends that faculty expand their definition of the public service mission by providing more services to private sector, for-profit entities. Professionally-related public service (such as consulting, performing research for industry and undertaking local problem-solving) contribute to the building of linkages between business, government and academia.

The Review Panel also recommends that colleges and universities adjust their institutional policies to give public service activities greater weight in decisions to award tenure. Like scholarly research and publication, professional public service can be quantified in terms of client contact hours and evaluated in terms of the practical outcomes of the interaction. The Review Panel believes that greater rewards for public service will contribute to the diffusion and commercialization of new ideas.

2.2 REDUCED REGULATION OF PROPRIETARY RIGHTS. The Review Panel encourages university leaders to modify current proprietary policies in a manner which enhances faculty contributions to economic development. At least, universities are asked to consider placing the responsibility for licensing and proprietary rights in the hands of research officials rather than in the hands of officials responsible for administration.

2.3 VENTURE CAPITAL FUNDS. As a result of Public Act 55 of 1982, 5 percent of Michigan's public retirement funds were committed for use as venture capital. Since that time, approximately $90 million in venture investments have been made. State support for venture capital has produced three important results: (1) the state's investment portfolio has become more diversified; (2) a greater level of private sector venture capital has been secured; and (3) new business enterprises have been supported.

The Review Panel recommends that research universities allocate up to 5 percent of their endowment investments for venture capital purposes. By implementing such a policy, the Review Panel believes that research universities would enjoy benefits similar to those reaped by the state through its related program. In addition, by dedicating endowments to this purpose, institutions could expect a greater return on investments, stronger institutional loyalty on the part of recipient businesses and a more vigorous regional economy.

2.4 MICHIGAN CENTER FOR PRODUCT DEVELOPMENT (MCDP). Previous commitments to a state fund for applied research have been short-lived and weakly monitored. In fact, the $8.9 million appropriated in fiscal year 1984 has now lapsed. To ensure the success of the MCPD and to stimulate product innovation, the Review Panel recommends that this funding be restored.

The MCPD would fund the commercialization of laboratory discoveries into new products. Many eligible firms, unable to obtain financing from traditional sources or venture capitalists, would find the structure of the MCPD advantageous. The Center would provide partial financing to firms; in return, the Center would demand a royalty based on the sale of new products. Products eligible for financing would be selected based on their ability to provide a high rate of return to the MCPD and the likelihood of commercial success. Priority would be given to projects jointly developed by higher education and business.

2.5 SYSTEMWIDE TECHNOLOGY TRANSFER NETWORK. At present, mechanisms for facilitating cooperation between colleges, universities and the state's businesses are embryonic. Channels for industry to gain access to higher education's problem-solving capabilities are still evolving. Access to technical assistance is especially troublesome for small- and medium-sized firms. Therefore, the Review Panel recommends that the current network of technology transfer agents be refined so as to link the state's colleges and universities more tightly. Refinement of the network should, at least, involve three steps: (1) establishment of a uniform automated data collection system; (2) the placement of technology transfer agents on all campuses as well as in the Department of Commerce; and (3) adequate support for technology transfer endeavors.

2.6 EXCHANGES AND INTERNSHIPS. To promote a better understanding between academia and business, the Review Panel recommends that a program of faculty internships with business and higher education administrators be undertaken. Such a program would enhance the ability of faculty at public institutions to provide technical assistance to industry and the public sector through exposure to the problems and needs of these client groups. Internships would be jointly supported by each sector. In addition, the Review Panel encourages colleges and universities to allow business and government leaders to undertake teaching responsibilities on campuses. To preserve the quality of instruction, however, adjunct faculty arrangements should not be overused.

2.7 ENTREPRENEURIAL TRAINING FOR STUDENTS. To ensure that college graduates understand how to establish viable commercial ventures, the Review Panel recommends that higher education placement offices offer entrepreneurial consultation seminars to interested students and alumni.

2.8 COORDINATED FEDERAL ACTIVITY. Although research institutions develop individual relationships with federal agencies, greater collaboration and closer monitoring of federal activity is desired. Therefore, the Review Panel recommends that research universities establish a joint Washington presence in order to improve Congressional relations and increase research support funding. This joint office should maintain strong liaison with the State of Michigan Washington Office and the Michigan Department of Commerce.

Short-term goals for joint university representation in Washington include: the enhancement of Michigan's image as a state which supports frontier research/development; an increased level of federal support for graduate and undergraduate financial aid; increased federal appropriations for research and education in science and engineering; and an increase in Michigan's share of funding from the six agencies responsible for 95 percent of the federal support for university research (NIH, NSF, DOD, DOE, NASA and USDA).

2.9 COMMON SEMESTER CALENDAR

The Review Panel believes that federal grant procurement efforts would be enhanced if the major research institutions operated on a common semester calendar.

Finally, legislators and state officials are encouraged to work on all fronts to improve the degree to which Michigan citizens, especially faculty, can pursue entrepreneurial objectives.

SECTION THREE:

A STRATEGY FOR TARGETING THE JOB TRAINING AND RETRAINING SERVICES OF HIGHER EDUCATION

People and their talents have always been critical factors of production. Human resource development and knowledge have, since 1929, accounted for 75 percent of the increased output enjoyed by the United States. People and knowledge, furthermore, are predicted to stimulate more growth than any other factors between now and the mid-1990s.

Predictions that workers will increase economic growth are based on assumptions which have implications for higher education. Increased worker productivity assumes that advances in new knowledge will allow labor to continue "working smarter," that more workers will avail themselves of formal education, that labor will be reallocated through retraining and that the labor force will increase in quality.

Complementary to assumptions about the quality of labor are facts about changing production methods and job demands. Industries are increasing the use of technologies which substitute equipment for people in the manufacturing process. Consequently, industrial employers will demand larger and larger numbers of workers who understand engineering principles and are skilled enough to carry out precision work. However, recent trends in training and education show that, between 1963 and 1975, the U. S. share of the world's skilled workers fell from 29 percent to 26 percent. Internationally, the U. S. has dropped from second to seventh in the skill levels of workers.

This decline in labor quality is evident in Michigan, as well. A recent evaluation of southeastern Michigan's economy[8] compared the educational level of Detroit residents with that of residents in 32 other metropolitan areas. The study found: (1) only 15.4 percent of adult Detroit residents had four or more years of college; therefore, Detroit ranked 30 of the 32 areas; and (2) only 66 percent of the adult Detroit labor force had earned a high school diploma; therefore, Detroit ranked 21 of 32 areas.

The report recommended a massive restructuring of the education system to improve both the capabilities of workers and Michigan's competitive position.

On the one hand, Michigan's work force is strong; labor in Michigan is abundant. On the other hand, because of the state's historical reliance on manufacturing, the skills of Michigan workers reflect the existence of a predominantly labor intensive, mass production-oriented job market.

In light of an emerging reliance on machines and scientists, Michigan and other manufacturing states are implementing programs to re-tool experienced adult workers, to expose entry-level workers to new work processes and, above all, to provide enough training to satisfy the ongoing future demand for these services. These plans and programs, of necessity, will rely heavily on the training and instructional capabilities of higher education, especially community colleges.

This section of the paper surveys Michigan's job training and retraining efforts. It recommends ways for training programs to more clearly address the labor force demands of the next century by serving dislocated workers, by coordinating job training information and by giving community colleges primary responsibility for such training.

MICHIGAN'S LABOR FORCE: PRESENT AND FUTURE

On July 9, 1984, this Review Panel met to discuss a memorandum from the Governor's Office for Job Training (GOJT). At that meeting, Dr. Eugene Paslov, Director of GOJT, provided an introduction by noting that, of Michigan's labor force of 4.3 million people, about 500,000 are unemployed and between 180,000 and 200,000 are permanently displaced from the job market.

Intended to combat these unemployment/dislocation statistics are 34 job training or retraining programs. A total training and vocational education investment of about $800,000,000 is available from private, federal and state sources.

In looking to the future, Dr. Paslov identified four phenomena that must be recognized and accommodated. First, just as occurred in the area of agriculture seventy-five years ago, Michigan will experience high levels of structural unemployment; i.e., unemployment caused when jobs exist for qualified workers, but the unemployed lack the necessary qualifications. Second, individuals will face career changes every five to ten years. Past practices of using the same skills for a working lifetime will rapidly become impossible. Third, the retraining necessary to accomplish career transitions more and more will be done away from the work place. Fourth, the Great Lakes region will continue to be a center of manufacturing activity. Even with a reduction in the relative size of manufacturing employment, this region will continue to be an important source of jobs.

Dr. Paslov's observations are compatible with other projections about the future nature of work and business: (1) employment in the future is expected to be predominantly knowledge-based; (2) future jobs will require at least periodic, if not ongoing, education; and (3) compared to self-employment and the service sector, the industrial sector will decline in importance as a site for employment, nationally.

Michigan's labor force can be divided into three main categories, each with unique training needs and backgrounds.

- New Entrants. New workers entering the labor force may have acquired basic job skills from the K-12 system and/or from vocational-technical training programs. Some young workers go directly from high school to a two- or four-year institution and successfully complete a degree program. Others pursue apprenticeship or advanced vocational-technical training. Michigan, with more than 500,000 people enrolled in its system of public and private colleges and universities, makes significant human capital investments.

- Experienced Workers. Many experienced workers need skill upgrading, maintenance or new skills. Training for this latter category of worker is only available if employers provide training in-house or through a proprietary training provider. Although state-administered programs may be available to provide or supplement needed training, employers and potential trainees usually know little about the character and availability of these services.
- Dislocated Workers. Not only do dislocated workers confront the problem of identifying retraining options, they frequently have difficulty acknowledging the need to receive retraining. The number of dislocated workers requiring special assistance (including counseling and career guidance) far exceeds the federal funds available.

Problem One: Training for Dislocated Workers

Michigan's higher education system has a vital role to play in preparing people for new employment opportunities. However, this role must be carried out in partnership with private employers and federal funding agencies. The most serious overall training gap in Michigan concerns programs for 200,000 dislocated workers.

In this regard, there are private sector retraining programs, notably the auto industry's "nickel an hour" fund. This fund is designed to finance the retraining and reorientation of auto workers displaced by changing production technology. Nothing comparable exists for dislocated workers in supplier industries or in smaller firms which lack the resources to assist, relocate or retrain dislocated workers.

Under Title III of the Job Training Partnership Act (JTPA), the federal government provides just over $11 million annually to Michigan for training dislocated workers. When matched with local funds, the JTPA program serves approximately 8,050 individuals.

Problem Two: Uncoordinated Job Training and Retraining Resources.

As pointed out earlier, applicants for job training assistance face a complex maze of program alternatives. Programs are funded and administered by different levels of government; they are offered in a variety of settings--public, private, academic and nonacademic. Information about program opportunities does not exist in one central location.

Problem Three: Education and Training as Institutional Missions.

In its Midyear Progress Report the Commission described the need to develop clear mission statements for institutions and for subsectors of the overall higher education system. For purposes of this paper, it is important to make a distinction between "training" and "educational instruction." Vocational-technical programs intended to prepare individuals to carry out a specific, delimited job function are considered by this Review Panel to be "training" programs. Curricula leading to the award of Associate and Bachelor degrees, and which expose students to the arts, humanities and technical coursework, are considered to be "educational" in nature. These distinctions should be included in role and mission statements so that institutions can serve the labor force based on what they do best.

RECOMMENDATIONS TO TARGET AND COORDINATE JOB TRAINING AND RETRAINING SERVICES

3.1 FINANCIAL AID FOR ADULT JOB TRAINING AND RETRAINING. The Review Panel recommends increased funds to retrain dislocated workers and employed workers whose skills need updating. Although 200,000 Michigan citizens now fall into the former category, federal funds are only adequate to serve 8,050 of the people displaced by the recession and new technology. As a way to enhance the level of job retraining resources, the Review Panel recommends that community colleges include dislocated workers in programs of special counseling and curriculum modification. A financial aid program which is sensitive to the special circumstances and vocational needs of adults who often attend parttime at community colleges, colleges and universities should also be funded.

3.2 CENTRALIZED MARKETING FOR JOB TRAINING. Information on existing training programs must be made available through a single point to new and expanding industries. The Office of the Ombudsman offers an excellent model for consolidating training information or packaging programs designed for the needs of these industries using the substantial resources of community colleges as well as colleges and universities.

At present, job training applicants (like many businesses) face a complex maze of program alternatives funded and administered by different levels of government--offered in a variety of settings (public, private, academic and nonacademic). A single contact point is needed. The Review Panel recommends that the position of Job Training Ombudsman be established with access to both the statewide technology transfer network previously discussed and to the labor market elements of the higher education database proposed in the Midyear Report.

3.3 LABOR MARKET INFORMATION. The Review Panel recommends that the proposed higher education database make occupational supply and demand data available, in usable form, to all parties involved in job training/retraining. In order to ensure that workers are prepared for jobs that actually exist, employers, workers, instructors and students must have advance knowledge about changes and expansions in business and industry.

3.4 COMMUNITY COLLEGES AS LEADERS IN ADULT JOB TRAINING. Community colleges should be formally assigned major responsibility for adult job training. As locally-based institutions with a high degree of local control, contact with business and industry, and accessibility, they can best offer the off-site job training and retraining that has begun competing with on-the-job methods of the past. In this role, community colleges are urged to strengthen communication links with industry to ensure that the equipment used for instruction matches the equipment graduates will use in the workplace.

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Appendix A

THE SCIENTIFIC INSTRUMENTATION NEEDS
OF
RESEARCH UNIVERSITIES

A Report to the National Science Foundation
by the
Association of American Universities

June 1980

The Scientific Instrumentation Needs of Research Universities

EXECUTIVE SUMMARY

OBJECTIVES OF THE STUDY

- assess the current status of scientific instrumentation in major research universities
- identify factors which facilitate or impede its development, acquisition, use, and maintenance
- estimate the future consequences of present funding policies
- recommend appropriate policy changes

METHODOLOGY

- sixteen universities, six national and government laboratories, and nine commercial laboratories were visited; about 80 department heads and over 250 researchers and research administrators were interviewed in the universities; in addition, the views of approximately 60 researchers and research managers were gathered in visits to national, government, and commercial laboratories
- five fields of science and engineering were studied: physics, chemistry, biological sciences, earth sciences, and electrical engineering
- numerical data on instrumentation acquisition, age, and replacement were gathered from 14 universities and four commercial laboratories

THE PROBLEM

Instrumentation is essential for progress in experimental research. Scientific knowledge has advanced rapidly; new instruments, more costly but qualitatively superior to earlier ones, have allowed measurements previously impossible. The rate of change has been great, competition among researchers intense. The capacity of university researchers to work at the frontiers of knowledge has important consequences for the nation's future research productivity and for the training of future generations of scientists and engineers.

The federal government has adopted a variety of funding policies for the support of research instrumentation: the competitive project system, special instrumentation programs, formula grant programs, block-funded centers, federally sponsored research centers, and regional instrumentation centers chief among them. For about 15 years, federal support for basic research has gradually declined; now support levels are further strained by rapid inflation. But inflationary price increases are simply the rising baseline upon which are superimposed the frequently much larger increases resulting from instrumentation advances.

ASSESSMENT

The great diversity of instrumentation needs found among institutions visited precludes simple generalizations. However, problems in the acquisition, use, and maintenance of research instrumentation were found in all of the leading universities visited. The precise configuration of these needs and problems varies widely. The capabilities of institutions and departments to meet them do also.

University researchers face great difficulty in replacing worn-out or obsolete instrumentation and in acquiring new instruments needed for frontier research. A comparison of university instrumentation inventories with those of two leading commercial laboratories reveals that the median age of university equipment is *twice* that of the commercial laboratories' instrumentation. Even the nation's major research universities have not kept pace in meeting instrumentation needs. Researchers heavily dependent upon federal funds have witnessed grant size fall behind escalating research requirements. As a result, many work with inadequate tools that impair the pace of research, force closure of lines of inquiry, strain operations and maintenance budgets, and compromise the advanced education of graduate students.

Start-up funds for new faculty often are shrinking as costs rise. Support equipment is needed to test, calibrate, and augment primary instruments. Often it is especially difficult to fund. Funding for operation and maintenance costs is increasingly difficult to obtain. As a result, faculty and students sacrifice research time to these routine tasks.

Many research facilities are in need of renovation or replacement; federal funding for these purposes has decreased, however, and universities lack the funds to respond. Signs that aging facilities now impede research were found in many laboratories and support facilities.

Local university needs vary widely, reflecting the unique circumstances under which each institution operates and the great diversity between and even within the five fields studied. Present funding policies do not provide sufficient flexibility to deal with such local circumstances.

When compared with government and commercial laboratories visited, most university laboratories fare poorly. The best-equipped industrial laboratories surpass almost all university laboratories visited. One university researcher captured the sense of disparity and observed, "the ivory towers are now in industry." The director of one leading industrial research laboratory described the struggle of university researchers as he has observed them as "pathetic." When asked to contrast their laboratories with foreign laboratories, a number of university researchers stated that many, most notably those in Japan and West Germany, are now superior.

CONCLUSION

The quality of research instrumentation in major university laboratories has seriously eroded. Not all, but many researchers in the nation's best-funded universities are struggling to work effectively with obsolete tools. The equipment being used in the top-ranked universities has a median age twice that of the instrumentation available to leading industrial research laboratories.

Three *causes* are identified:

- a relative decrease in instrumentation support
- inflexibility within the project system
- insufficient support for maintenance

Three major *consequences* are:

- diminished research productivity
- reduced training capacity
- decline in international competitive status

RECOMMENDATIONS

Federal policy for the support of research instrumentation should provide for a basic three-part funding strategy:

- strengthen instrumentation funding in the project system
- expand special instrumentation programs
- create in the National Science Foundation a new, supplemental formula grant program to provide needed flexibility to meet diverse institutional needs

FUTURE STUDIES

Five studies are recommended: 1) a thorough analysis of foreign research funding policies and programs and their implications for the competitive stature of American science should be undertaken; 2) a study of cooperative research arrangements between industries and universities and the factors—including federal policies—that encourage and discourage them is needed; 3) the planned assessment of regional instrumentation centers should include consideration of the concerns documented in this report; 4) universities should assess current instrumentation policies and develop mechanisms and incentives designed to promote effective sharing of instrumentation; 5) an assessment of the costs and benefits of federally-mandated equipment inventory and reporting systems should be undertaken.

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APRIL 1983

THE ENGINEERING LABORATORY EQUIPMENT CRISIS IN MICHIGAN UNIVERSITIES

MSPE

MICHIGAN SOCIETY
OF PROFESSIONAL
ENGINEERS

THE NATIONAL PROBLEM

Recently (June 1982) a study was conducted by the Professional Engineers in Education Practice Division of the National Society of Professional Engineers title "The Laboratory Equipment Factor."

The results of a survey of 26 well-known engineering colleges in the United States showed that the shortfall in engineering laboratory equipment expenditures from 1971-1981 was in excess of $1,000,000,000 to maintain the laboratories in the 1971 condition. Restoration to the 1971 status plus additions to accommodate enrollment growth to 1981 would have cost over $2,000,000,000. Converting these numbers to a unit cost results in expenditures of $400 per Full Time Equated Student annually or approximately $2,000 per Bachelor of Science degree awarded during this time period.

An analysis of national expenditures for education and their relationship to the Gross National Product (GNP) concluded that twenty percent of the nation's GNP should be credited to advances in education. Studies by the Stanford Research Institute and the Denver Research Institute show that investments in engineering colleges have been the source of most of the "growth" enterprises in this country.

The decade-long decline in the flow of resources to laboratory equipment for higher education as described above has taken its toll. The University is no longer at the "cutting edge" and current graduates will not be the contributors that their predecessors were. Some have said engineering education is distressed but a more apt description is a crisis state.

THE MICHIGAN PROBLEM

A survey of the engineering laboratory equipment needs in Michigan Universities was conducted by the Professional Engineers in Education of Michigan Society of Professional Engineers in the Spring of 1983. This survey produced a total dollar need for each University in order to bring the engineering educational laboratories up to a 1983 technology level and to be fully operational by Fall 1983.

Table 1 shows the summary of these needs by university. The table includes seven state supported universities with the Accreditation Board for Engineering and Technology accredited programs and one private institute. The total need for these universities is just over $76.5 million. 3

Projections into the future can be based on anticipated graduates. Using the number of $2000/graduate from the National Survey mentioned earlier, a dollar need per year per institution can be developed. Table 2 shows the projected numbers of graduate engineers for the current academic year 1982-83 and the projected number of graduates for the year 1986-87. Using the $2000 per graduate multiplier, the continuing annual costs per institution are shown in Table 3. The numbers of graduates include those with Master of Science and Ph.D. degrees as well as undergraduate degrees.

The individual laboratory equipment needs by Department for each University are listed for reference following Table 3. These needs are for the current year Fall 1983 operations. The totals from these listings are those contained in Table 1.

SUMMARY

Advanced engineering laboratory equipment is critically important if engineering schools are to provide the type of educational opportunities that industry needs. There is a critical shortage of modern equipment in engineering schools. Although some of the more renowned engineering institutions in the nation have ample endowments and modern facilities and equipment, the facilities in the average engineering college are 30 years old.

The conclusion reached by the Michigan Society of Professional Engineers and the American Society for Engineering Education in March 1980[*]. . . "*that the engineering education system is currently stretched to (or beyond) its limit*" should be underscored. Clearly the problems of large class size, high student-to-faculty ratios, deteriorating physical plants, inadequate equipment, and inability to acquire laboratory equipment commensurate with present day technological advances in industry are too widespread to be ignored. They are too pervasive to be regarded as transient.

Continuing obsolescence of laboratory equipment and instruments has placed many schools in the position of not being representative of modern professional practice. New technologies, apparatus and methodologies are evolving more rapidly in industry, and lack of up-to-date equipment and instruments within the university exacarbates the situation. Rapid evolution of such fields as robotics, microelectronics, computer aidec design, optics, spectrographics, electron microscopy, computer graphics . . . etc., has left the universities in a teaching mode behind current professional practice.

The State of Michigan must assign a high priority to solving the $78 million Engineering Laboratory Equipment Crisis in Michigan Universities in order to insure a sound engineering educational base for the future.

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[*] Excerpts from "The Laboratory Equipment Factor

UNIVERSITY OF MICHIGAN
$ 21,170,000

DEPARTMENT	LABORATORY	NEED
Aerospace		$1,2[illegible]0,000
	Computer, Information and Control	
	Gas Dynamics	
	High Altitude Engineering	
	Structural Dynamics	
Atmospheric and Oceanic Science		$ 920,000
	Air Pollution and Instrumentation	
	Atmospheric Chemistry	
	Data Processing and Synoptic	
	High Altitude Engineering	
	Marine Chemical	
	Marine Geological	
	Michigan AirGlow Observatory	
	Physical Oceanography	
	Space Physics	
Chemical Engineering		$1,650,000
	Applied Polymer	
	Biomechanical Engineering	
	Bioengineering	
	Catalysis and spectroscopy	
	Chemical Engineering	
	Coal Slurry and Energy Logistics	
	Ecosystem Simulation	
	Electrochemical	
	Heat Transfer	
	Laser Light Scattering	
	Oil Shale Research	
	Petroleum Research	
	Process Dynamics	
	Sonochemical Engineering	
	Thermal Properties of Fluids	
Civil Engineering		$1,640,000
	C. E. Materials	
	Concrete Research	
	Construction Engineering	
	Geotechnical Engineering	
	Hydraulic Transients	
	Coastal Hydraulics	
	Sanitary Engineering	
	Solid Wastes	
	Structural Dynamics	
	Structures	
	Water Resources Engineering	
Electrical and Computer Engineering		$5,500,000
	Bioelectrical Sciences	
	Cooley Electronics	
	Electro-Optics	
	Electron Physics	

6

MICHIGAN STATE UNIVERSITY
$15,002,000

DEPARTMENT	LABORATORY	NEED
Agricultural Engineering	Food Engineering	$ 835,000
	Mechanization/Automation	
	Structures and Environment	
	Microelectronics and Robotics	
	Computer Equipment	
	Irrigation/Drainage/ Climatology	
Chemical Engineering	Analytical Equipment	$1,817,000
	Computer Equipment	
	Catalysis and Reaction Engineering	
	Transport Processes and Unit Operations	
	Polymer Instrumentation	
	Polymer Engineering and Science	
	Biochemical/Genetic Engineering	
Civil and Sanitary Engineering	Fluid Mechanics	$ 850,000
	Geotechnical Engineering	
	Structural Engineering	
	Sanitary Engineering	
Computer Science	Computer Programming	$1,735,000
	Pattern Recognition and Image Processing	
	Digital Design	
	Artificial Intelligence	
	Robotics	
	Artificial Language	
	Computer Networks	
	High Performance Systems	
Electrical Engineering and Systems Science	Electronic Systems Design and Analysis	$4,315,000
	Analog Circuits	
	Micro and Mini Computers	
	Digital Electronics	
	Microwave and Electro Magnetic Fields	
	Power and Machinery	
	Control Systems	
	Communications	
	Semiconductor Devices	
	Integrated Circuit Fabrication	
	Electronics Shop	
Mechanical Engineering	Computer Aided Design	$3,650,000
	Combustion	

	Instrumentation	
	Fluid Mechanics	
	Heat Transfer	
	Vibrations	
	Energy Conversion	
Metallurgy, Mechanics and Materials Science		$1,950,000
	Solid Mechanics	
	Composite Materials	
	Biomechanics	
	Physical Metallurgy	
	Manufacturing Systems	

MICHIGAN TECHNOLOGICAL UNIVERSITY

$15,827,000

DEPARTMENT	LABORATORY	NEED
Chemistry		$1,146,000
	General Chemistry	
	Organic Chemistry	
	Quantitative Analysis	
	Physical Chemistry	
	Instrumental Analytical Chemistry	
	Industrial Chemistry	
	NMR Spectrometry	
	Electron Spin Resonance Spectrometry	
	Mass Spectrometry	
	IR Spectrometry	
Chemical Engineering		$3,572,300
	Process Control	
	Unit Operations	
	Solid Fuels Processing	
	Reactions Kinetics	
	Transport Processes	
	Polymer Engineering	
	Mixing and Fluid Mechanics	
Civil Engineering		$ 587,000
	Engineering Materials	
	Geotechnical Engineering	
	Cold Regions Engineering	
	Concrete and Aggregates	
	Interactive Design	
	Environmental Engineering	
	Pollution Control	
	Structures	
	Transportation	
	Water Resources	
Electrical Engineering		$2,999,850
	Optical Systems	
	Computer Engineering	
	Networks	
	Printed Circuits	
	Illumination	
	Power Electronics	
	Electroacoustics	

BACKGROUND AND POLICY PAPERS:
HIGHER EDUCATION ROLES AND MISSIONS

PREFACE

Background Paper: Higher Education Roles and Missions

Policy Paper: Higher Education Roles and Missions

The Roles and Missions, Finance and Capital Outlay Review Panel of the Commission spent nearly a full year considering public college and university roles and missions. The Review Panel reviewed existing role statements, consulted with leaders at the state's colleges and universities, heard expert testimony, examined other states' approaches and evaluated various analyses of quantified information.

A summary of the Review Panel's deliberations is presented in the following two papers. The Policy Paper: Higher Education Roles and Missions uses the factual material summarized in the Background Paper: Higher Education Roles and Missions to develop specific role and mission statements and associated policies. It should also be noted that the Policy Paper was written by Commissioners; the Background Paper was compiled by Commission staff

STATE OF MICHIGAN

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POLICY PAPER:

HIGHER EDUCATION ROLES AND MISSIONS

Prepared by

Roles and Missions, Funding and Capital Outlay Review Panel

November, 1984

Over the past 20 years, Michigan's system of higher education has expanded and diversified considerably. A number of factors are responsible. From 1950 through the early 1970s there was adequate state and federal money to finance expansion. Enrollments grew as the baby boom came of age. Responding to a complex mix of market demand, state needs, academic ambition, political patronage and available funding, individual institutions grew in number, offered many new graduate and undergraduate programs, and even changed names from college to university.

However, the history of the past 10 years forces the Review Panel to conclude that our higher education system must adapt again to a changed world--a world at once more demanding and much more stringent. Reduced state revenues and federal funding coupled with increased claims from other sectors for state support means scarcity of educational resources. Demographic changes and high tuition levels are driving reductions in Michigan's traditional college enrollment, leading to significant shifts in market demand for educational products. Past expansion of program offerings has in many cases today produced unnecessary duplication and overlap, diversion of resources from previously established programs, reduction in quality and overall loss of focus within the system as a whole.

Against this background, the Review Panel concludes that the State of Michigan cannot afford the costs of blurred institutional roles and mission, resource diffusion and decline of quality, mindless academic ambition and costly political parochialism. The Review Panel recognizes that the system has made significant progress in re-ordering internal priorities in response to cuts in state support; indeed, some $70 million in cuts/reallocations have already been made by the system. Despite this very great effort, we must face the fact that no longer can or should every college and university in Michigan undertake to play every role in our higher education system. To ask every institution to play all roles is to ensure that none can play well the particular role for which its comparative advantages best suit it.

Michigan's system of higher education needs a policy basis on which resource allocations can be made and institutional performance judged. Therefore, it is necessary to define the mission of the system as a whole and develop a classification system which describes distinctive institutional roles for each segment of the system as a whole and assigns roles to each individual institution.

There has been much discussion of the "role and mission" of Michigan's higher education system. Such discussions often fail to distinguish clearly between mission (i.e. overall objectives) and roles (i.e. ways in which individual institutions contribute to achieving the mission). Particular roles only take on meaning when the overall mission of Michigan's system of higher education is examined.

The primary mission of the system is to provide instruction. For many universities, an added primary mission is to conduct research and provide research training. Both of these missions are often interconnected.

These primary missions must successfully be accomplished if the higher education system is to meet its secondary mission:

- Develop the human resources of Michigan and, thereby, help determine the demography of the state;
- Foster economic growth;
- Provide access to higher education;
- Provide public services such as cooperative extension.

Within this framework of overall educational mission, the Review Panel has developed a classification system for various roles which should be filled by institutions in various segments of the system.

In attempting to develop this classification, the Review Panel kept carefully in mind the following points:

- The phrase "differing roles" does not imply better or worse, or more important or less important roles. Within the overall context of Michigan's higher education system, the roles of community colleges are distinctive and as important--and as important to be carried out with excellence--as are the roles off research--as are the roles of research universities.
- In concentrating on describing functional roles for various segments of the system, the Review Panel recognizes that there exist variations and exceptions from any theoretically consistent system.

  Nevertheless, the Review Panel was impressed at how smoothly various individual institutions fitted into distinctive roles. The basis for classification rests on observed facts, not on artificial theory.
- The Review Panel expects that the classification system will be used as a basis to help eliminate unnecessary program overlap and duplication now and, more importantly, in the future. Its purpose is to provide policymakers and

resource allocators with a rational basis on which both to fund new programs in the future and to decline to fund other new or existing programs.

HIGHER EDUCATION TAXONOMY

I. Public Community Colleges

Roles: Primarily responsible for providing job training and limited technical instruction and employee upgrading. Provide broadly distributed core curriculum and locally accessible general and technical undergraduate instruction for the first two years past K-12. Provide remedial instruction for high-school-leavers, gateway access to four-year institutions, and continuing education opportunities for adults.

Degrees: Certificates and associate degrees.

Student body: Local, predominantly nonresidential.

Institutions: All public and community junior colleges.

Implications:

A. Job Training:

a. It is intended to assign to community colleges a primary role in Michigan's job training system. Assignment of job training activities to community colleges is not intended to exclude other institutions, public or private.

B. Gateway:

a. Since many students (often nontraditional) get their start in higher education through community colleges, clearer agreements should be worked out between community colleges and four-year institutions as to which credits are transferable and under what circumstances.

C. Remediation:

a. Assignment of remediation responsibilities to community colleges is short run in time, expedient in logic. It is explicitly not intended to shift responsibility for proper instruction away from the K-12 system, where it properly belongs in the long run.

b. As remediation programs are improved, community colleges and four-year institutions should be able to raise their admission standards.

II. Technical Colleges

Role: Provide high-market demand, mainly technical two- and four-year undergraduate instruction.

Degrees: Mainly baccalaureate; some associate; few masters.

Student body: Regional, both residential and nonresidential.

Institutions: Ferris State College, Lake Superior State College.

Implications:

A. The Review Panel recommends that technical colleges be limited to baccalaureate and residential associate degrees. It excepts from this the Doctor of Optometry program at Ferris State College.

B. The Review Panel notes that Ferris State College has developed a series of programs that are tightly focused on needs of sectors outside the college such as the business community and, in that sense, are market driven. (It also finds that many institutions tend to offer programs that have little basis in response to external demand and are, resultingly, institution-driven.) The Review Panel urges Lake Superior State College to continue evolving toward market-driven programs.

III. Regional State Colleges

Roles: Provide broadly-based and locally-accessible general four-year instruction. Provide limited, highly-focused, high-market demand, nontraditional business and professional graduate training; provide regional public service and economic development assistance.

Degrees: Baccalaureate; limited business/nontechnical masters.

Student body: Regional; mainly nonresidential.

Institutions: Grand Valley State College, Oakland University, Saginaw Valley State College, University of Michigan--Dearborn, University of Michigan--Flint.

Implications:

A. While some institutions in this classification have repeatedly been mentioned as candidates for closure, the Review Panel finds that such action would be arbitrary and overlook the services such institutions are providing their respective regions. The Review Panel, however, urges institutions to remain mindful of the proper focus of their roles and the risks involved in exceeding them.

B. State colleges should not develop degree programs above the bachelor of arts level. In particular, emphasis now being placed on technical training should not be permitted to evolve into engineering programs to the detriment of existing engineering schools in the state.

C. The Review Panel places major importance on the college sector of Michigan's higher education system in economic development services for which there is demonstrated market demand. These include professional development, technology transfer and single-purpose advanced training.

IV. General State Universities

Roles: Provide broadly-based four-year undergraduate instruction. Provide broadly-based, professional and educational graduate instruction. Provide extension programs through the masters degree.

Degrees: Baccalaureate, masters.

Student body: Regional and statewide; predominantly residential.

Institutions: Central Michigan University, Eastern Michigan University, Northern Michigan University, Western Michigan University.

Implications:

A. General state universities make up the greatest problem in graduate-level program duplication. The Review Panel recommends that no new doctoral programs be funded at such universities. Existing doctoral programs, often duplicating those offered at research universities and often of very low volume, should be reviewed with an eye toward either discontinuation or consolidation with those at research universities.

B. The Review Panel recognizes the particular importance of the research effort being undertaken at Western Michigan University in areas pertaining to the paper industry; the Review Panel excepts these from the foregoing comments about doctoral and research programs.

C. Eastern Michigan University appears to be in the process of converting its program offerings into largely market-driven ones. The Review Panel urges other similar universities to follow this pattern.

V. Research Universities (with national ranking)

Roles: Provide advanced graduate and graduate professional instruction and broadly-based four-year undergraduate instruction, often leading to graduate admission. Conduct basic and applied research. Focus on economic development research and technology transfer. Location of professional schools.

Degrees: Baccalaureate, masters, graduate (first) professional, doctorate.

Student body: National, international, state; mainly residential.

Institutions (in alphabetical order):

A. Michigan State University: Land grant national-class research university, with peer group the top five public American land grant universities.

B. Michigan Technological University: Extractive industry (mining, metals, wood) engineering-focused university with peer group the top 10 American similar public engineering and mining-focused institutions.

C. The University of Michigan: Comprehensive world-class research university, with peer group the top 10 public and private American universities.

D. Wayne State University: Urban research university in development, with peer group the top 20 American public urban universities.

Implications:

A. A main objective of the Commission report will be to return our research universities to their previous preeminence and, thereby, to contribute to the development and diversification of our economy. Accordingly, research universities should be the recipients of policy-driven, targeted and focused reallocation of state and federal funding and capital investment.

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B. Past practices of appropriations cuts via Executive Orders have fallen most heavily on the research universities.

C. Program duplication and diffused resource allocation have adversely affected research universities, often damaging quality programs, particularly in professional schools which have a significant impact on economic development. Better focusing academic and professional programs and avoiding duplication with existing efforts at research universities is an important part of the Review Panel's recommendations.

D. It is clear that the higher education system as a whole has a significant role to play in Michigan's drive for economic development. It is also clear that the main thrust for economic development will come from university research programs that are on the frontiers of research. The Review Panel recommends that economic development funding be concentrated on those universities and programs which have a real chance of having an effect on economic development because they are of superior quality.

E. Wayne State University has a dual role to play. As an urban university, it has a responsibility to provide access and maintain programs for a nonresidential student body in a way unlike other research universities. As a research university, it is less comprehensive in scope than The University of Michigan and Michigan State University. Provisions should be given to allow Wayne State University to continue its special responsibilities, while at the same time providing proportionate funding to its research programs.

F. Similarly, Michigan Technological University has achieved preeminence in a narrowly focused area of engineering, mining and extractive technologies. This focus should be encouraged but should not be widened inappropriately.

POLICY IMPLICATIONS

The overall implication of this classification system is obvious: The State of Michigan should decline to subsidize programs and degree offerings at individual institutions which are inconsistent with this classification.

A series of policy statements and implications stem from this classification. To avoid ambiguity about exactly what the Review Panel means by its work, the material below is intended to make explicit what might otherwise be unclear. Organization is by functional topic within the higher education system.

I. Policies Pertaining to Levels of Instruction

A. Policy: Responsibility for various levels of instruction shall be assigned to individual institutions according as they fall within a given sector of the higher education system. Funding decisions should be made in accordance with this mission and role classification.

Implications:

- The state should focus resources assigned to a given role in higher education on defined institutions to avoid diffusion of scarce resources and reduce overlap and duplication of programs. All institutions cannot be all things to all students.

- The state should decline to subsidize new programs at individual institutions which are inconsistent with the roles assigned to that institution.

- The state should require program review followed by elimination or consolidation of all programs which are inconsistent with this classification.

- In general, the state should require program review (as above) for all duplicating low-volume programs by nonconforming institutions at the doctoral and masters level and many at the undergraduate level.

- Where state policy and resources make funding of new programs possible, they should be funded consistent with this classificatio

The state should require program review followed by elimination or consolidation of all programs which are inconsistent with this classification.

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- Where state policy and resources make funding of new programs possible, they should be funded consistent with this classificatiomasters degree (i.e. social work, public health, etc.) is assigned to research universities, general state universities and less so to colleges.

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F. **Policy:** Responsibility for instruction leading to a masters degree for teachers is assigned to general state universities and less so to research universities.

G. **Policy:** Responsibility for four-year undergraduate training leading to a bachelor of arts degree is assigned to all institutions, excepting community colleges. Undergraduate instruction at research universities often leads to post bachelor of arts work.

H. **Policy:** Primary responsibility for job training is assigned to community colleges.

II. Policies Pertaining to Access

A. **Policy:** The State of Michigan has an obligation to provide geographical access to students wishing to pursue two- and four-year instructional programs.

Implication: Institutions now providing geographical access for two- and four-year programs should not be closed.

B. **Policy:** The State of Michigan has no necessary obligation to provide geographic access for instructional programs above the baccalaureate level.

Implication: Justification for program continuation above the baccalaureate level based solely on geographic access should be treated by policymakers and resource allocators with skepticism.

III. Policies Pertaining to New Programs

A. **Policy:** The state should focus resources on programs where they provide demonstrated benefits, consistency with role and mission statements and where pre-existing programs will not be harmed.

Implication: The state should maintain or improve quality of existing programs rather than use scarce resources to expand into new areas.

Implication: The state should subsidize new programs in engineering technology and technology transfer, but should not create new engineering schools.

IV. Policies Pertaining to Occupational Supply and Demand

The classification structure might be used to define the primary labor market served by individual institutions. Community colleges and regional state colleges might be expected to primarily serve regional labor markets. Regional universities and technical colleges might be expected to primarily serve larger regional and state labor markets, and research universities with associated professional schools might be expected to primarily serve the state and national markets.

These differentiations could become important in determining which institutions should establish or expand programs to meet labor market demands.

Particular problems exist in two areas of the state:

A. Southeastern Michigan, where an oversupply of colleges and universities exists. The Review Panel urges all institutions in this area to work together to eliminate duplications and overlaps, especially at the graduate level.

B. Western Michigan, an area of substantial economic growth and diversification at the same time is underserved by the higher education system, especially at the graduate level.

V. Policies Pertaining to Program Duplication

The effect of the classification system would be to reduce future unnecessary duplication by clearly assigning responsibilities to different categories of institutions.

VI. Policies Pertaining to Economic Revitalization and Research

The classification system assigns responsibility for basic and applied research to the four institutions with the largest amount of sponsored research activity. The underlying principle is that this targeting will maximize effectiveness by preventing dilution of state funds for research. This would have the effect of focusing resources on strong efforts rather than mediocrity. This classification, however, should not be used to diminish the effort of regional and technical colleges and community colleges in technology transfer and assistance to the business community.

STATE OF MICHIGAN

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BACKGROUND PAPER:

HIGHER EDUCATION ROLES AND MISSIONS

Prepared for

The Governor's Commission on the Future of HIgher Education

in Michigan

November, 1984

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In its Midyear Progress Report, the Governor's Commission on the Future of HIgher Education in Michigan noted:

> "Clearly defined roles and missions should be developed for each public institution of higher education and should relate to the needs of the state."

To facilitate development of an objective taxonomy of institutions, the Review Panel considered background material on various existing higher education classification methodologies, some quantified data on the geographic reach of public colleges and universities in Michigan and the distribution of programs among the institutions. The following is a summary of the primary data that were reviewed:

I. Higher Education Classifications

A number of classification schemes already exist. The following section outlines three different taxonomies and the variables used in the classifications.

A. Carnegie Council on Policy Studies in Higher Education

This is perhaps the most widely recognized taxonomy. It was originally developed in 1970 and updated in 1976. It consists of the following classifications:

1. Doctorate-granting Institutions

    a. Research Universities I: Fifty leading universities in terms of federal financial support of academic science provided they awarded at least 50 Ph.D.s.

    - Michigan State University
    - The University of Michigan--Ann Arbor

    b. Research Universities II: One hundred leading universities in terms of federal financial support granting at least 50 Ph.D.s.

    - Wayne State University

    c. Doctorate-granting Universities I: Award 40 or more Ph.D.s in at least five fields (plus M.D.s) or received at least $3 million in federal support and granted at least 20 Ph.D.s.

    - None

    d. Doctorate-granting Universities II: Award at least 20 Ph.D.s regardless of field or 10 Ph.D.s in at least three fields.

    - Western Michigan University

2. Comprehensive Universities and Colleges

a. Comprehensive Universities and Colleges I: Offer a liberal arts program as well as several other programs such as engineering and business administration. Many offer masters degrees but have limited or no doctoral programs.

- Central Michigan University
- Eastern Michigan University
- Ferris State College
- Grand Valley State College
- Lake Superior State College
- Michigan Technological University
- Northern Michigan University
- Oakland University
- Saginaw Valley State College
- The University of Michigan--Dearborn

b. Comprehensive Universities II: Offer a liberal arts program and at least one professional or occupational program such as teacher training or nursing. Contains many former teacher colleges.

- The University of Michigan--Flint

3. Liberal Arts Colleges: None

4. Two-year Colleges and Institutions: Twenty-nine public community colleges.

5. Professional Schools and Other: None

6. Institutions for Nontraditional Study: None

B. National Center for Higher Education Management Systems (NCHEMS).

More recently, NCHEMS, a nationally recognized consulting firm, developed a classification to be used primarily for fiscal comparisons. The definitions, which are much more complex than those used in the Carnegie scheme, are described in the attachment. The institutions are classified as follows:

1. Research Universities with Medical

- Michigan State University
- Wayne State University
- The University of Michigan--Ann Arbor

2. Research Universities without Medical
    - None
3. Universities with Medical
    - None
4. Universities without Medical
    - Western Michigan University
5. Comprehensive Institutions
    - Central Michigan University
    - Eastern Michigan University
    - Grand Valley State College
    - Northern ;Michigan University
    - Oakland University
    - Saginaw Valley State College
    - The University of Michigan--Dearborn
6. General Baccalaureate
    - Ferris State College
    - Lake Superior State College
    - The University of Michigan--Flint
7. Two-year Institutions, Academic Emphasis
    - All public community colleges not listed in 8 below.
8. Two-year Institutions, Occupational Emphasis
    - Gogebic Community College
    - Mid Michigan Community College
    - Kirtland Community College
9. Other Professional and Specialized
    - Michigan Technological University

C. Graduate-Research Classification

The public college and university system in Michigan has evolved into three reasonably distinct segments. Quantified measures of graduate instructional activity are readily available and illustrate this segmentation. The measures used here are the number of graduate programs, which indicates the level of instructional activity, and indirect cost revenue earned, which reflects the level of research activity.

Segment	Institution	Graduate Programs	Indirect Cost Revenue
A	U of M--Ann Arbor	358	$23,287,900
A	MSU	270	11,233,800
A	WSU	237	3,990,200
B	CMU	80	175,000
B	WMU	74	456,000
B	EMU	71	479,600
B	OU	26	503,300
B	MTU	24	1,175,400
B	NMU	23	185,200
C	GVSC	15	163,200
C	SVSC	10	37,800
C	U of M--Oakland	7	
C	U of M--Flint	3	
C	FSC	1	41,600
C	LSSC	1	38,400

II. Geographic Reach of Public Colleges and Universities

One important variable in a classification structure is the geographic reach of institutions. The following data examine this issue in a variety of ways.

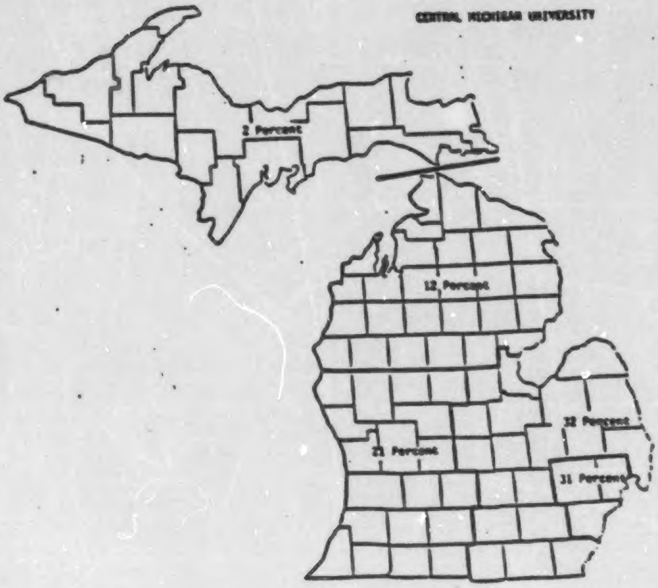
A. Percent of Enrollment by Region

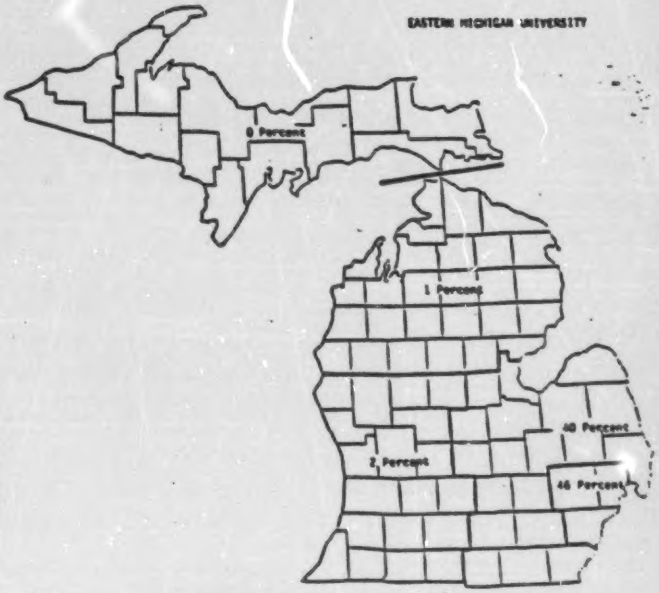
The simplest way to determine the geographic reach of each public college and university is to identify the percent of its in-state student body drawn from various regions in the state. These data indicate:

- CMU--statewide reach
- EMU--regional, primarily eastern lower peninsula
- FSC--statewide reach
- GVSC--regional, primarily western lower peninsula
- LSSC--statewide, primarily upper peninsula, but significant lower peninsula enrollment
- MSU--statewide reach
- NMU--regional, primarily upper peninsula
- OU--regional, Detroit area
- SVSC--regional, eastern lower peninsula
- UM--Ann Arbor--statewide, but only modest reach outside of eastern Michigan
- UM--Dearborn--regional, Detroit area
- UM--Flint--regional, eastern lower peninsula, exclusive of Detroit area
- WSU--regional, Detroit area
- WMU--statewide, but primarily southern lower peninsula

In summary, these data suggest there are six institutions with statewide reach and nine regionally focused schools. Actual percentages are displayed on the following maps.

ENROLLMENT BY REGION, FALL 1983


CENTRAL MICHIGAN UNIVERSITY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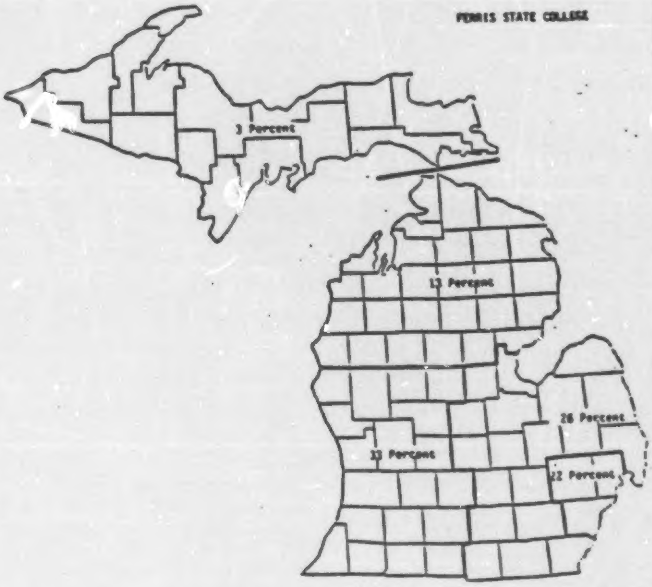
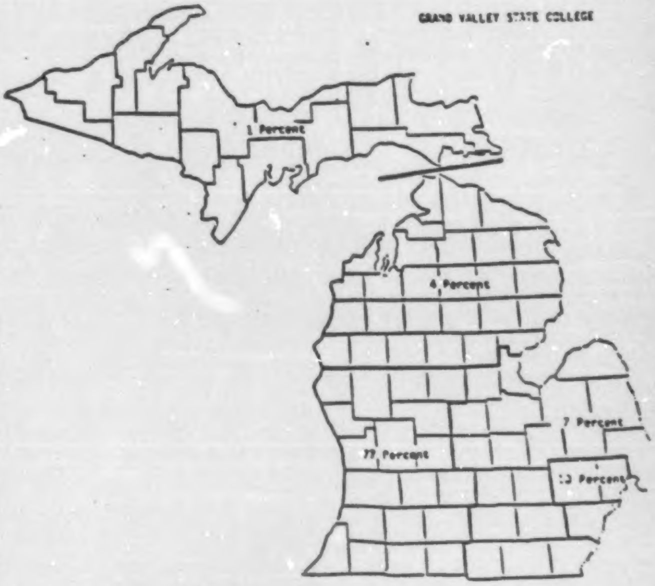
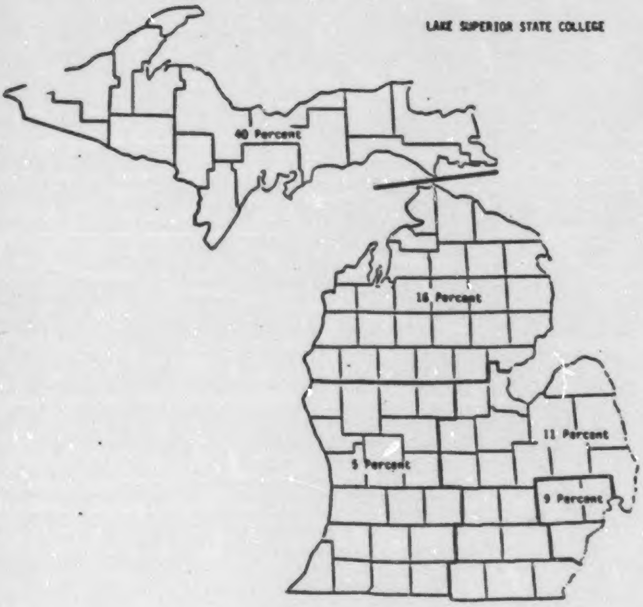
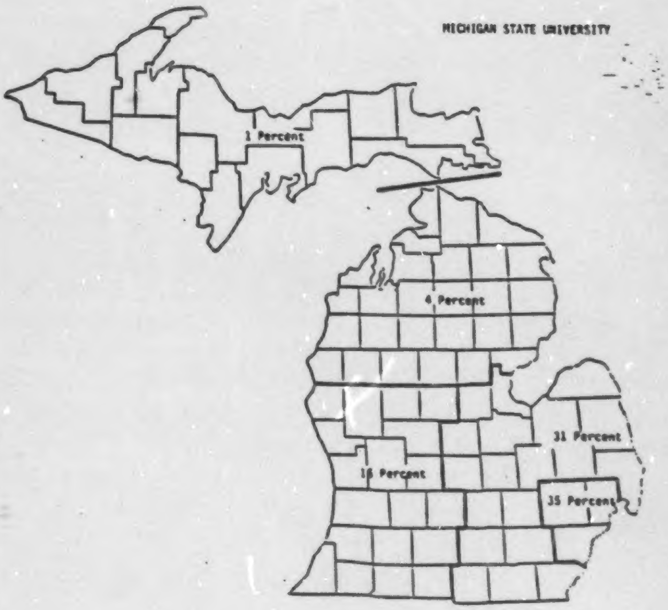

FERRIS STATE COLLEGE


GRAND VALLEY STATE COLLEGE

529


LAKE SUPERIOR STATE COLLEGE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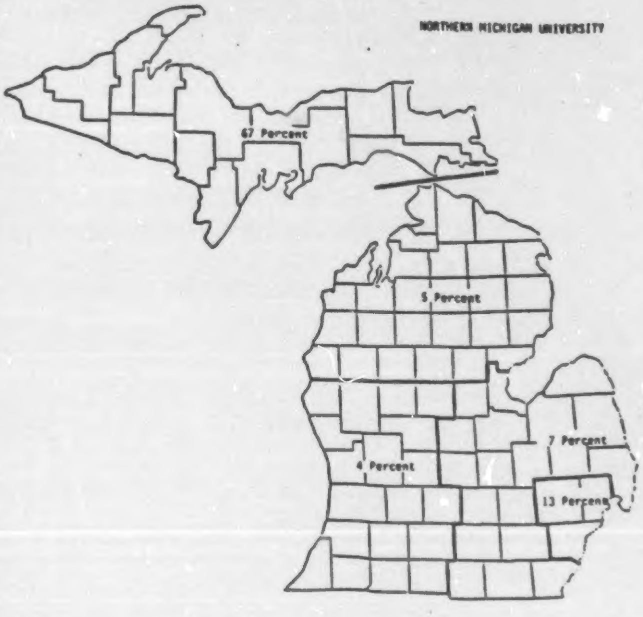
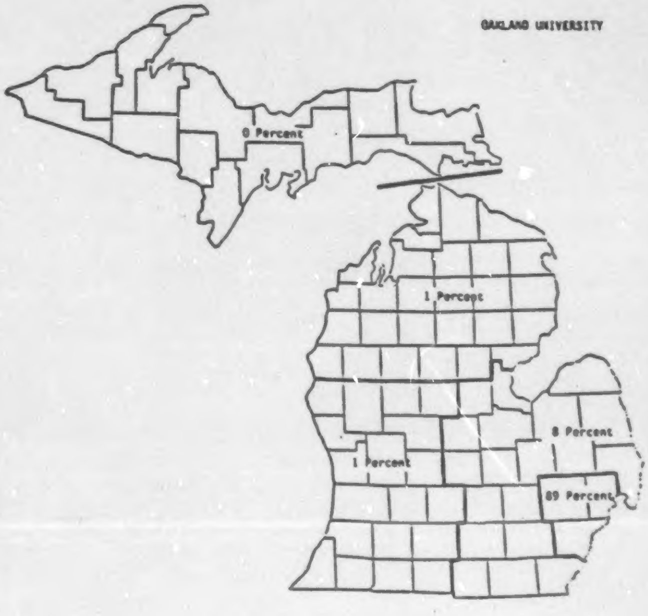
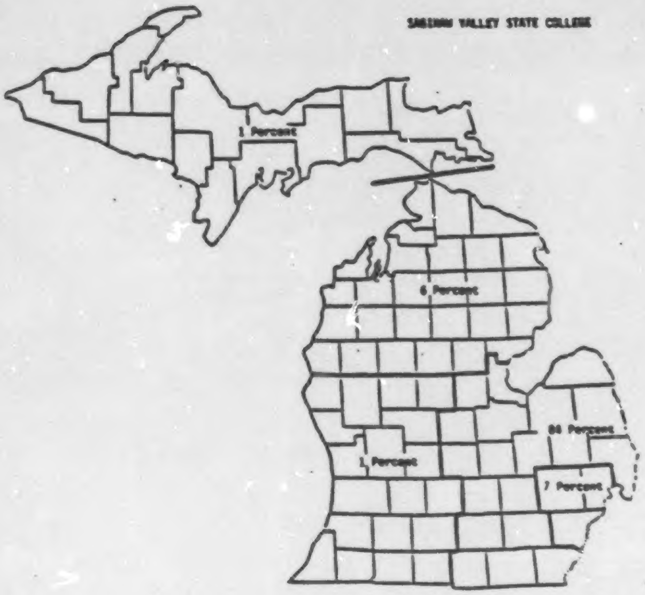
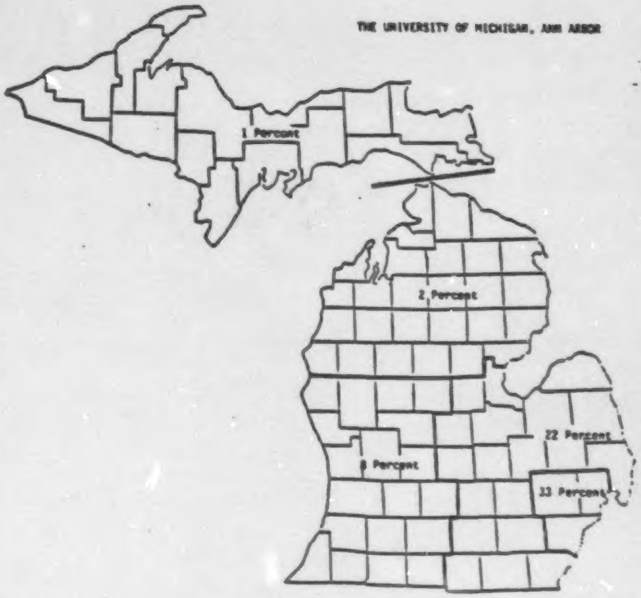
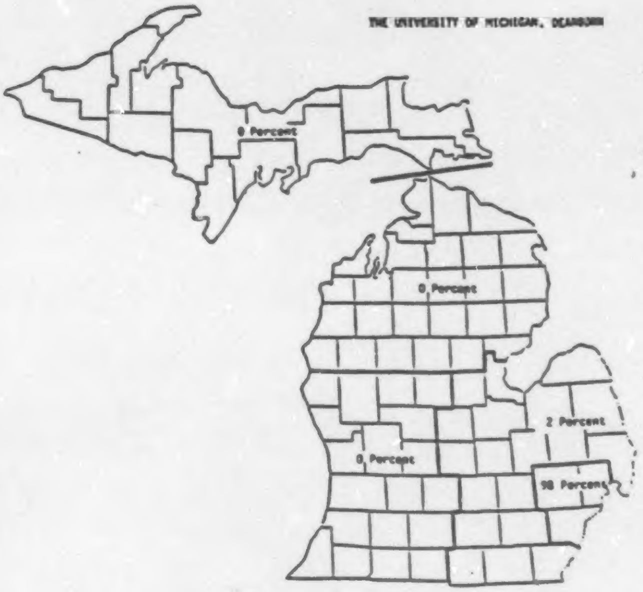

NORTHERN MICHIGAN UNIVERSITY


OAKLAND UNIVERSITY

530


SAGINAW VALLEY STATE COLLEGE


THE UNIVERSITY OF MICHIGAN, ANN ARBOR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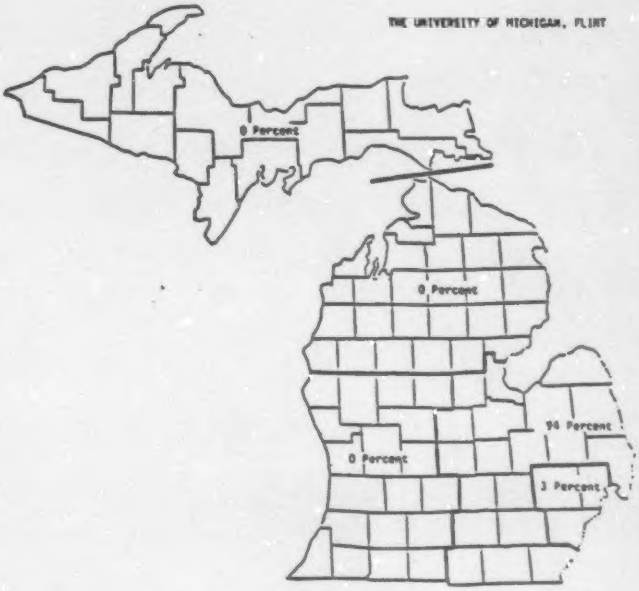
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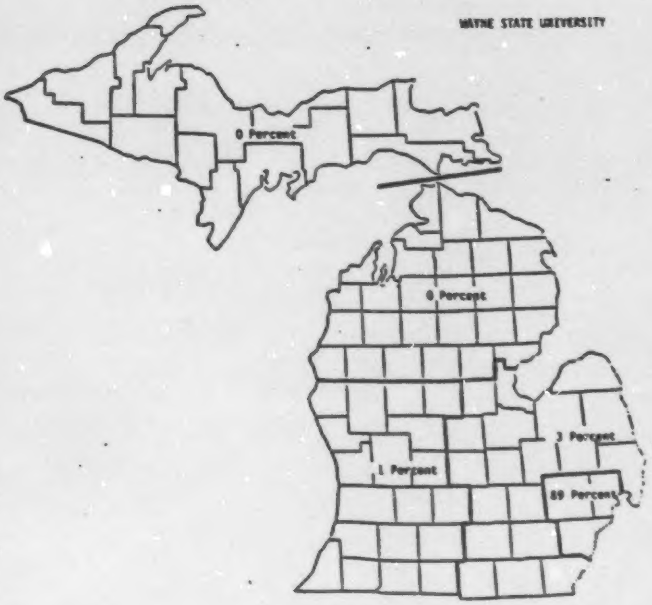
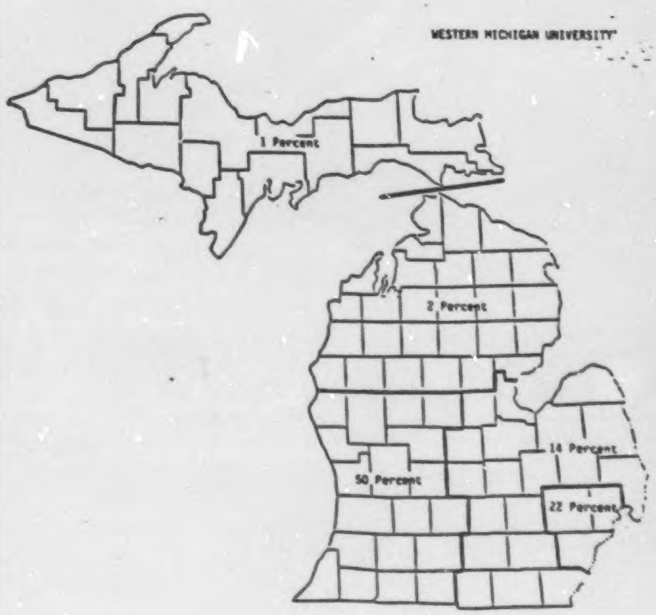

WAYNE STATE UNIVERSITY
0 Percent
0 Percent
3 Percent
1 Percent
89 Percent


WESTERN MICHIGAN UNIVERSITY
1 Percent
2 Percent
14 Percent
50 Percent
22 Percent

532

B. County of Residence, First-term Undergraduates

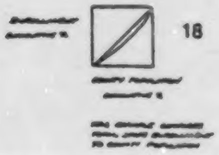
A similar, but slightly more sophisticated methodology, uses the county of residence of first-term undergraduates as a percent of that county's population to highlight the magnitude of an institution's draw in a county in relation to the number of people who live in the area. This information is graphically displayed on the following maps.

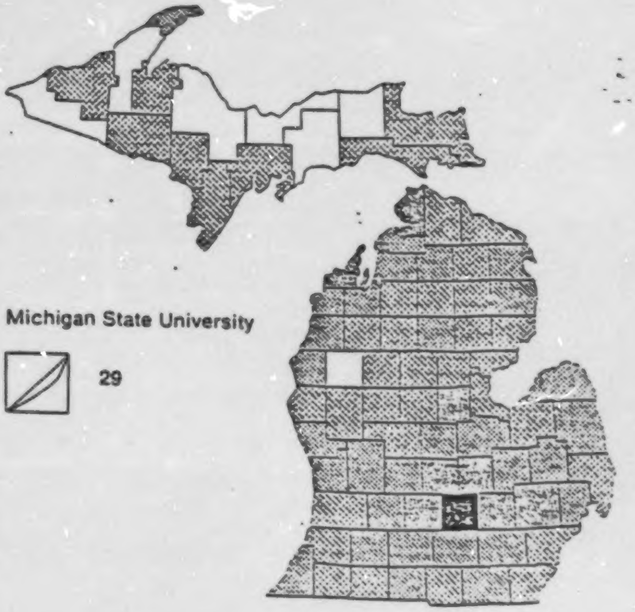
Fall 1983 Undergraduate Enrollment Data

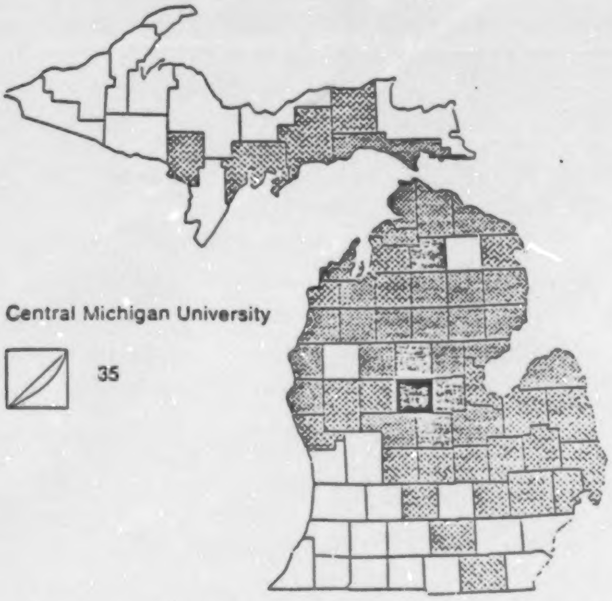
Percent of
Maximum Per Capita
Enrollment

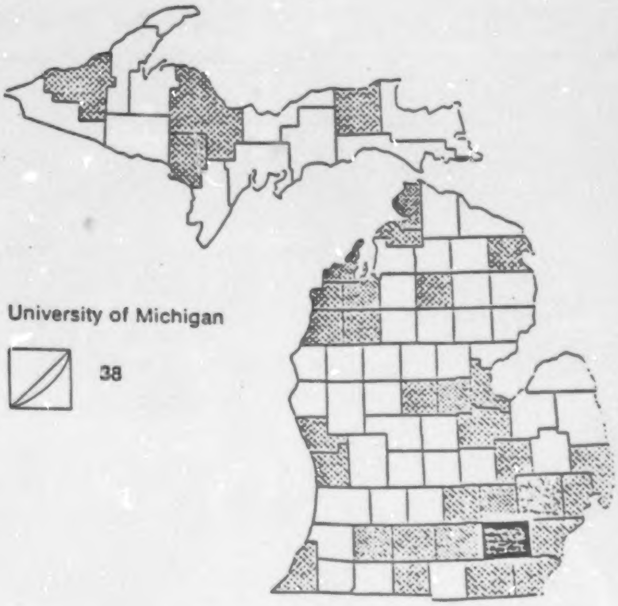
□ 0-10
▨ 10-20
▩ 20-40
▦ 40-60
■ 60-100

Gini Ratios

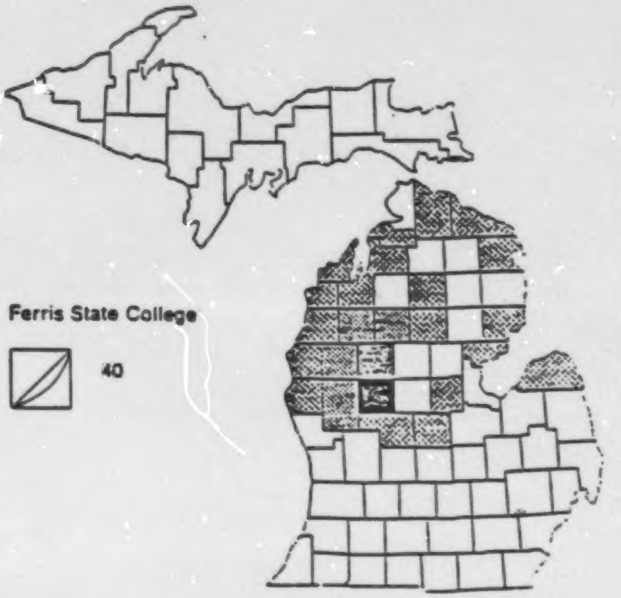


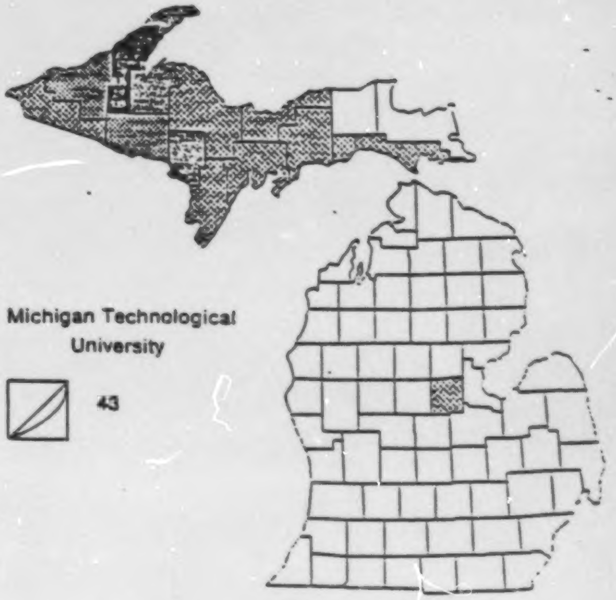

Michigan State University

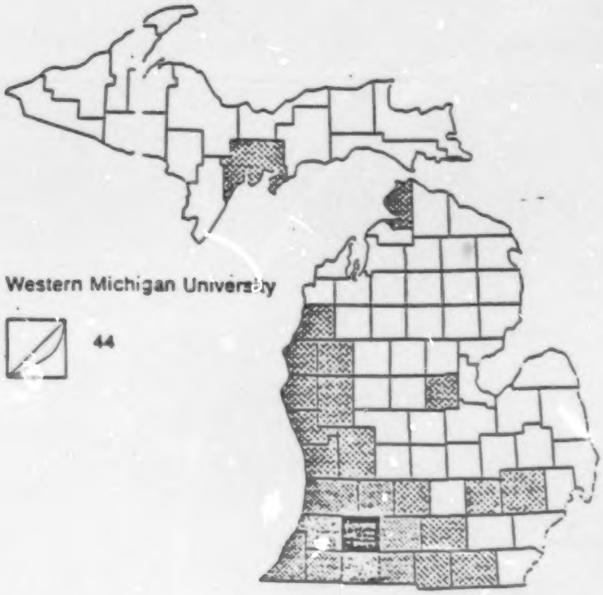

Central Michigan University


University of Michigan

534


Ferris State College


Michigan Technological University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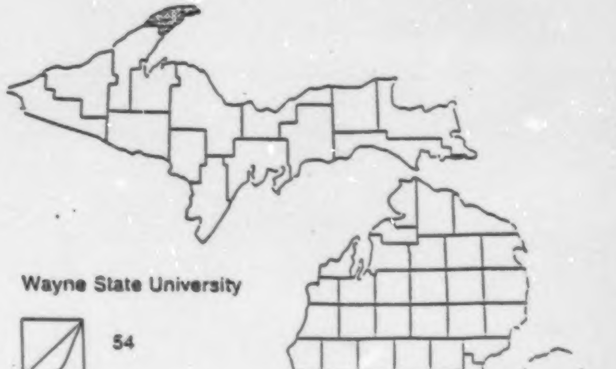
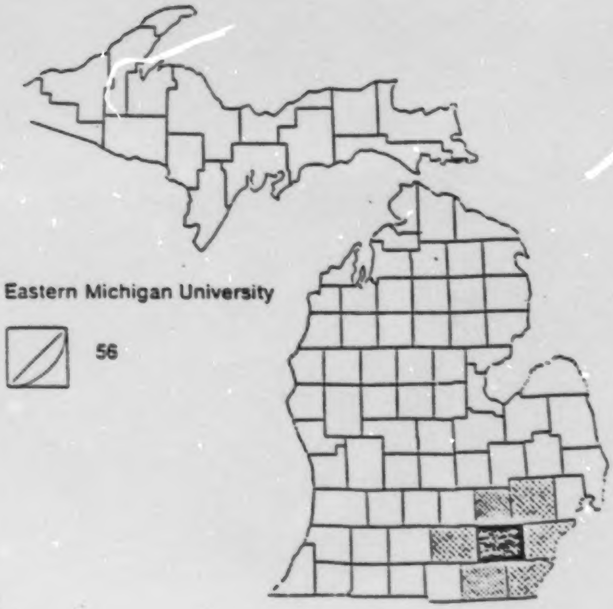
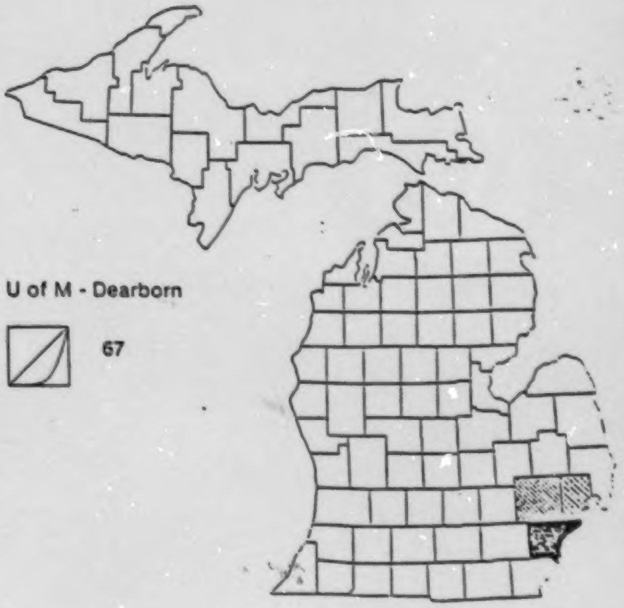
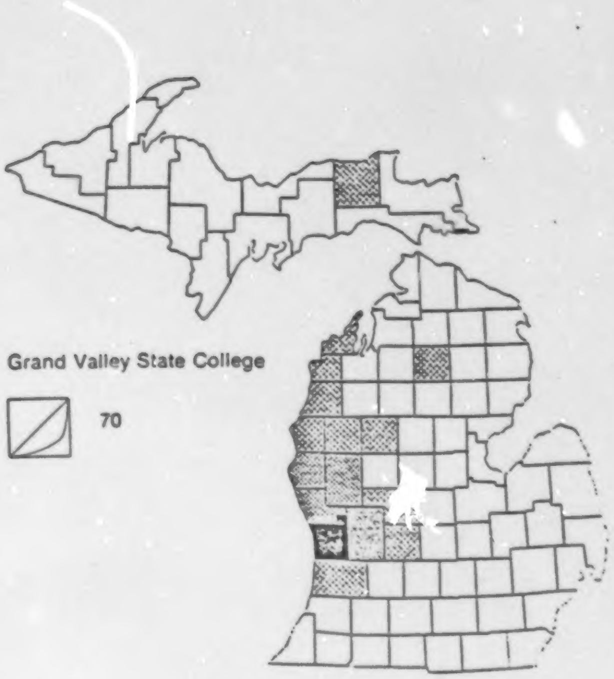

Wayne State University



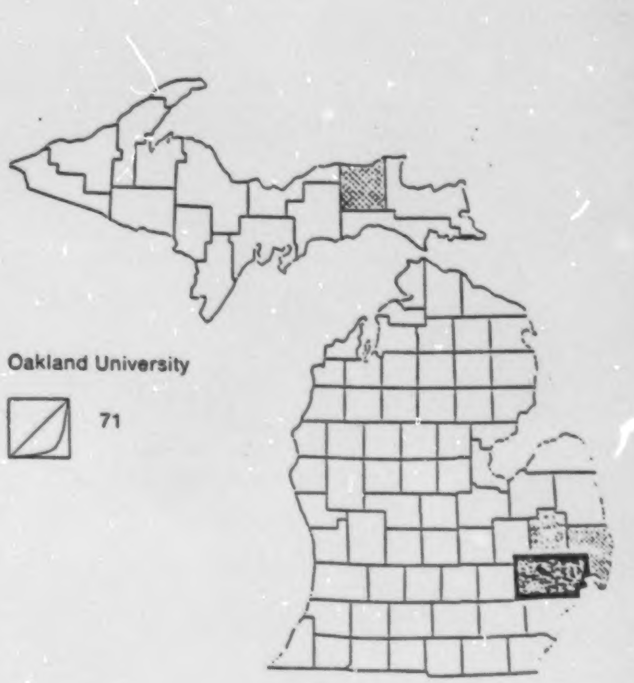
Eastern Michigan University



U of M - Dearborn



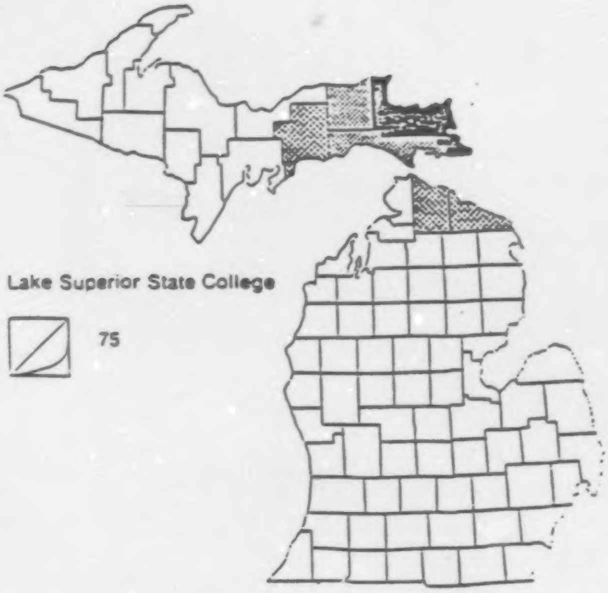
Grand Valley State College



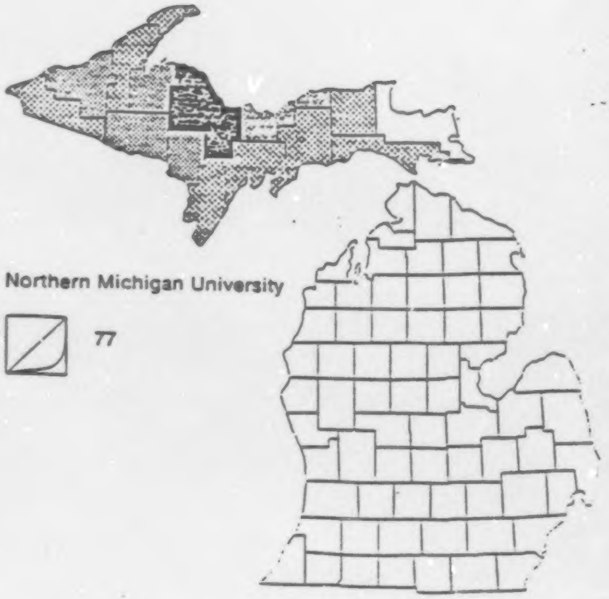
Oakland University

536

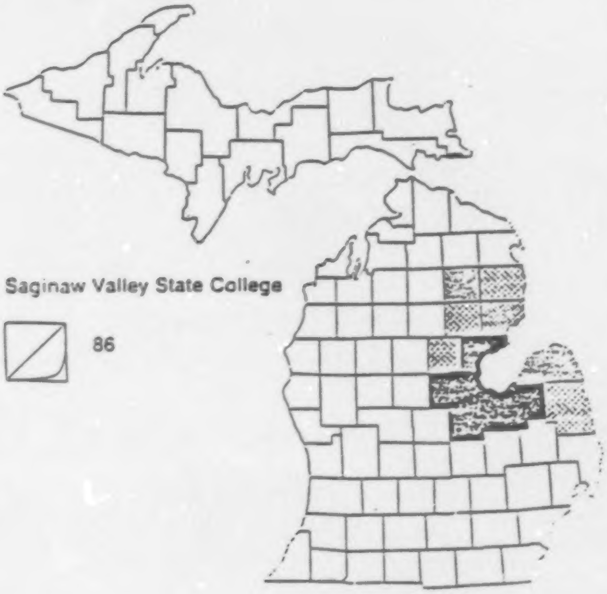
4ol


Lake Superior State College

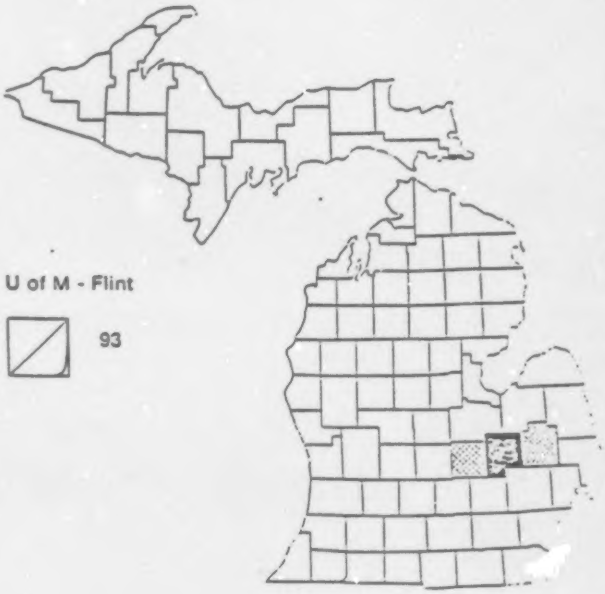
▨ 75


Northern Michigan University

▨ 77


Saginaw Valley State College

▨ 86


U of M - Flint

▨ 93

C. Gini Ratios, First-term Undergraduates

The above maps also include a statistical analysis called gini ratios. In this application, gini ratios measure the extent to which the distribution of students by county is like the statewide distribution of population. For example, since Ingham County has 3 percent of the state's population and Wayne County has 25.3 percent, an institution with a perfect statewide distribution would have 3 percent of its student body from Ingham County and 25.3 percent from Wayne and similarly for every other county. The gini ratio would be zero and the graph (box) would have the institution's distribution curve falling on the 45 axis. The greater an institution's enrollment comes from one or a few counties, the farther its distribution line is from the 45 line and the larger the ratio.

The most statewide institution is Michigan State University with a gini ratio of 29. Approximately 71 percent of MSU's undergraduate enrollment reflects the state's population distribution. The University of Michigan--Flint is the least statewide in character.

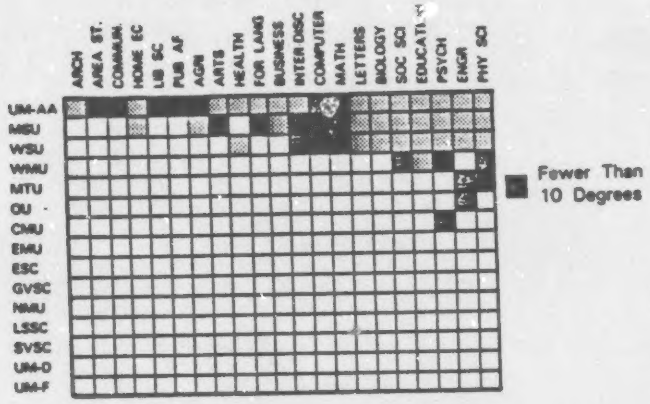
III. Distribution of Programs

The final piece of relevant background material is information on the current array of degree programs offered by the state's public colleges and universities. A comprehensive paper on this topic has been prepared, An Analysis of the Distribution of Programs at Michigan Public Colleges and Universities, and only a summary of the information presented in that paper will be reproduced here.

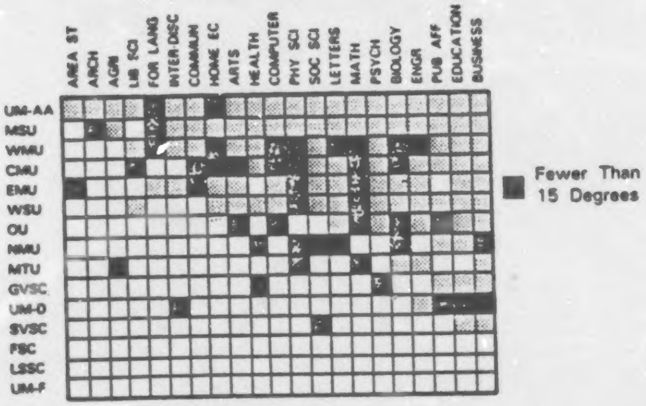
The following set of charts displays the distribution of degree programs at public colleges and universities.

Public College and University Degrees Conferred 1981-1982

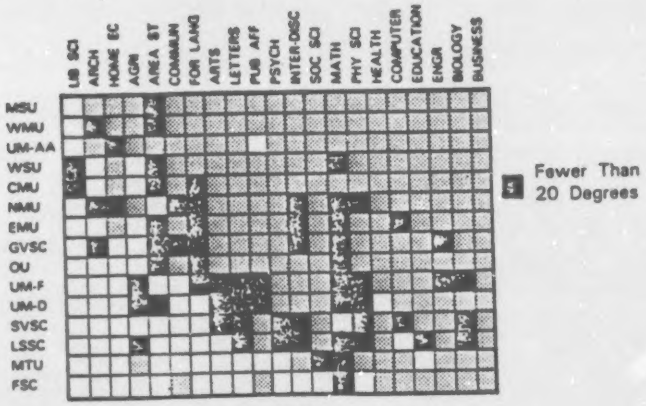
Doctoral Programs



Master Programs



Baccalaureate Programs



It is especially relevant to note for the development of a role and mission taxonomy that, currently, only a few institutions operate comprehensive doctoral programs. While seven schools grant doctorates, in all but four academic areas, Michigan State University and The University of Michigan award 75 to 100 percent of all degrees.

IV. Observations

The above information suggests a number of observations regarding each public higher education institution in Michigan:

A. Central Michigan University--A comprehensive institution with limited research and doctoral programs; its enrollment is drawn from throughout the state.

B. Eastern Michigan University--A comprehensive institution with limited research and no doctoral programs; its enrollment is regional.

C. Ferris State College--A technical institution with few graduate offerings; its enrollment is drawn from throughout the state.

D. Grand Valley State College--A comprehensive institution with limited graduate programs; its enrollment is regional.

E. Lake Superior State College--An institution with largely technical offerings and no graduate programs; its enrollment is regional.

F. Michigan Technological University--A specialized technical institution with significant engineering research and graduate programs through the doctoral level; its enrollment is drawn from throughout the state.

G. Northern Michigan University--A comprehensive institution with limited graduate offerings and no doctoral programs; its enrollment is regional.

H. Oakland University--A comprehensive institution with a number of small doctoral programs and limited research; its enrollment is regional.

I. Saginaw Valley State College--A comprehensive institution with very limited graduate activity; its enrollment is regional.

J. The University of Michigan--Ann Arbor--A research institution with a medical school and comprehensive graduate offerings; its enrollment is drawn from throughout the state.

K. The University of Michigan--Dearborn--A comprehensive institution with limited graduate programs and research activity; its enrollment is regional.

L. The University of Michigan--Flint--A comprehensive institution with very limited graduate and research activity; its enrollment is regional.

M. Wayne State University--A research institution with a medical school and comprehensive graduate offerings; its enrollment is regional.

N. Western Michigan University--A comprehensive institution with a number of graduate programs through the doctoral level, limited research; its enrollment is drawn from throughout the state.

TEACHER EDUCATION:
A PROBLEM OF QUALITY AND QUANTITY

STATE OF MICHIGAN

JAMES J. BLANCHARD, Governor
COMMISSION ON THE FUTURE OF HIGHER EDUCATION
North Ottawa Building, Box 30026, Lansing, Michigan 48909
517-373-4565

TEACHER EDUCATION:
A PROBLEM OF QUALITY AND QUANTITY

A STAFF REPORT
PREPARED FOR THE
REVIEW PANEL ON EDUCATIONAL QUALITY, ACCESS AND AFFORDABILITY

October 4, 1984

TEACHER EDUCATION:

A PROBLEM OF QUALITY AND QUANTITY

In that part of the Midyear Report dealing with K-12 education, the Commission articulated concerns about the teaching profession by stating that "the teaching profession (should) be strengthened by improving teacher training curricula and by expanding opportunities to update skills." Recent reports, both state and national, have discussed the critical problems facing Colleges of Education, K-12 school systems, individual teachers and teacher trainees.

This paper discusses the two major problems associated with teacher training: a failure to attract and retain qualified teachers and an erosion in the quality of teacher training programs. Part One of the paper discusses a projected undersupply of trained teachers (both new college graduates and experienced professionals). Part Two hones in on the reforms needed to attract more talented college-age individuals to study in Colleges of Education.

I. AN IMBALANCE IN SUPPLY AND DEMAND

Prior to the early 1970's, because the baby boom generation saturated the public schools, the supply and the demand for teachers were in balance. Large numbers of trained teachers were graduated from Colleges of Education and found jobs in an expanding and well-funded school system. Passing through the school system, baby boomers left empty classrooms in their wake. Consequently, the circumstances surrounding the teaching profession drastically changed.

Talented individuals began to train for more promising careers, leaving Colleges of Education to enroll less bright students in order to mitigate against drastic enrollment declines. In addition, downsizing which occurred in the wake of a maturing baby boom generation reduced the pool of experienced classroom teachers. This loss of both new and experienced teachers is discussed below.

Fewer New Teachers

Compared to other academic areas, significantly fewer students are enrolling in education programs. Appendix A compares student credit hours across academic areas and reveals a longitudinal decline in education enrollments. A clearer picture of teacher supply is indicated by counting the number of degrees awarded in education. In the three years between 1979 and 1982, the number of education degrees conferred declined significantly in Michigan.[1]

- Baccalaureate Degrees. Although the total number of baccalaureate degrees conferred increased systemwide, the number of baccalaureates in education declined by 1,085 -- the largest decline in any academic category over the three year period.
- Masters Degrees. A decline in the total number of masters degrees conferred during this period is largely attributable to the 17 percent decline in education masters degrees conferred.

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- Doctoral Degrees. The total number of doctorates conferred during this period increased, as did the number of doctorates conferred in education. It is important to note that WSU and MSU conferred 171 more education doctorates, while U of M conferred 35 fewer education doctorates between 1979 and 1982.

Contributing to this decline in the pool of potential teachers is a drop in the number of women and minorities entering the profession. Women, traditionally the backbone of the teaching force, are gaining access to other more lucrative careers. According to a Rand Corporation study, the proportion of women receiving bachelors degrees in education dropped from 36 percent to 18 percent between 1970 and 1980.[2]

Additionally, fewer college-age students are enrolling in education programs because of low teacher pay, a shrinking number of vacant teaching positions and negative attitudes about teachers and the value of their role.

Fewer Experienced Teachers

Declining graduation rates in education are exacerbated by an exodus of experienced teachers from the profession because of retirement, layoffs and other job possibilities. The average age of Michigan teachers is now 44 years. Consequently, the percentage of retiring teachers is higher than ever before.[3] Since 1974, declines in K-12 enrollments have forced downsizings and reconfigured job assignments. During the past ten years, layoffs reduced the size of Michigan's public school teaching force by 20 percent--the largest percentage decline in the United States.[4]

The downsized teaching force has also necessitated reassignment of untrained teachers to the areas of math and science. Finally, as the purchasing power of teachers declines, jobs outside the profession become increasingly attractive.

A Predicted Undersupply of Teachers

While the supply of teachers is declining (as teachers leave the classroom in large numbers and fewer college students choose teaching careers), the demand for teachers will begin a sizeable increase. An increased demand for elementary school teachers will begin as early as 1985, fueled by a baby boomlet which started in the early 1980s.[5] As this boomlet generation passes through the school system, the demand for secondary school teachers will subsequently heighten.

To assure a supply of qualified teachers in the remainder of this decade, efforts must be undertaken (1) to retain qualified teachers through improved salaries, working conditions and continuing education opportunities; and (2) to improve the quantity and quality of new teachers by improving admissions screening and curricula. The former reforms are adequately addressed by the State Board of Education in their Blueprint for Action. The latter reforms fall within the jurisdiction of the Commission, since change will have to be carried out by Colleges of Education. Suggested areas of reform are summarized below. Specific recommendations will be presented by Dr. John X. Jamrich of Public Sector Associates, author of Teacher Education and Schooling in Michigan: Agenda for the Future.

II. TEACHER TRAINING REFORMS

The Need for Talented Trainees

The quality of teacher education is inextricably related to the quality of trainees admitted by Colleges of Education. Negative perceptions of the teaching profession have reduced the pool of outstanding students seeking majors in education and increased the pressure to lower admissions standards as a way to keep enrollments stable.

Education majors do, in fact, represent the least academically talented college entrants. Appendix B compares the 1982 Scholastic Aptitute Test (SAT) scores of all college-bound high school seniors with seniors planning to major in education. The data reveal that prospective education majors test lower than their peers on this measure of verbal and mathematical achievement.

This information suggests the need to target recruitment programs at high-achieving high school and middle school students. It also suggests the need for special incentives to attract talented students into areas where teachers are in short supply:[6] reading (at the elementary level), bilingual education (at the secondary level) and vocational/technical education (at the secondary level). Incentives might include scholarships and loan forgiveness programs.

The Need for Curricular Reform

A controversy is brewing in Colleges of Education regarding the degree to which teacher training curricula should emphasize subject matter over methods. Traditionally, prospective teachers have been required to complete a four year program, concentrating on professional courses, i.e., courses dealing with the nature of the child and the learning process. A greater balance between process and content is believed to be an important reform in educational curricula.[7] In addition, more reliable measures of student competence are called for.

Given this information, it has been suggested that education curricula be reformed to ensure that graduates receive a broad liberal education, a scholarly knowledge in the subject to be taught and a sequence of professional courses followed by a clinical experience based in the schools. To satisfy these objectives, it may be necessary to extend pre-service teacher education from four to five years. If so, a year of supervised practice teaching could be used to evaluate teaching competence.

A Need for Continuing Education

Teaching quality is enhanced by life-long learning opportunities. Unless teachers can continue to professional development process throughout their careers, they face stagnation and obsolescence. Like other professionals, teachers need time to renew themselves by completing substantive, research-based courses in pedagogy and subject matter.

The Michigan Education Association (MEA) recommended several continuing education options in its booklet entitled Excellence for Every Student. Retooling Education for Michigan's Future:

> "Opportunities for the continuing education of teachers must be strengthened. Teachers must be allowed compensated time for study, curriculum development, planning, and expansion of knowledge. Such time might include activities such as graduate classes, curriculum development, professional meetings, and professional development classes. The responsibility for providing these opportunities must lie with the local school district and the state (p. 6)."

A Need to Target Training Responsibilities

Education resources are expected to plateau in the remaining years of this decade. Teacher enrollments will likely not reach the levels of expansion witnessed in the years before the 1980s. Therefore, responsibility for teaching research and the updating of teachers' skills must be added to the role/mission statements of appropriate research institutions. Michigan cannot afford a fragmented commitment of resources to the scholarly aspects of teaching.

Data on education degrees conferred reveal that WSU and MSU are the only research institutions conferring increased numbers of PhDs in education. The Panel should take these statistics into account in assigning responsibility for teaching research to one of the state's major research institutions. Relatedly, the Panel should recommend that funding formulas reflect the designation of one institution as the state's primary site for research and professional development.

APPENDIX A

PROGRAM	1974-75 Tot Student Credit Hour	1978-79 Tot Student Credit Hour	1981-82 Tot Student Credit Hour
Agric and Nat Resources	83,524	81,468	68,805
Architect and Envir Des	22,662	22,531	20,115
Area Studies	7,368	8,302	6,892
Biological Sciences	297,077	241,054	214,013
Business and Management	464,552	627,880	687,923
Communications	64,638	72,297	126,913
Computer and Info Sci	35,657	67,807	121,483
Education	813,568	625,892	500,662
Engineering	197,442	259,685	316,753
Fine and Applied Arts	280,265	256,492	239,487
Foreign Languages	152,633	140,058	155,783
Home Economics	74,627	75,513	77,640
Law	58,061	57,211	54,852
Letters	652,812	612,189	592,966
Library Science	21,403	14,811	10,731
Mathematics	367,731	397,531	451,193
Military Science	3,881	4,141	4,839
Physical Sciences	385,386	373,828	385,956
Psychology	302,918	286,802	263,726
Public Affairs and Servs	99,815	121,005	115,226
Social Sciences	966,584	830,296	821,931
Interdisciplinary Stud	202,864	157,382	123,004
Business & Commerce Tech	10,196	27,446	33,164
Data Processing Tech	0	201	2,120
Health & Paramed Tech	21,850	22,063	21,170
Mech & Engineering Tech	70,124	95,530	112,805
Natural Sciences Tech	2,736	4,907	9,657
Public Servic Technology	0	3,232	2,780
Osteopathic Medicine	0	25,810	27,945
Medicine	225,372	216,961	210,580
Dentistry	32,006	31,445	32,334
Public Health	24,207	20,137	20,222
Pharmacy	35,956	30,613	25,765
Nursing	52,150	62,617	63,940
Veterinary Medicine	26,301	24,997	21,134
Other Health Professions	35,651	50,673	53,404
Optometry	0	3,243	4,295
GRAND TOTAL	6,075,350	5,954,050	6,002,124

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EDUCATION MAJORS SCORE LOWER

Average combined verbal and mathematics scores on 1982 Scholastic Aptitude Tests of all college-bound high school seniors, compared with those seniors planning to major in education.

	All	Education		All	Education
Alabama..........	964	828	Montana..........	1,033	907
Alaska...........	923	850	Nebraska.........	945	933
Arizona..........	981	889	Nevada...........	917	818
Arkansas.........	999	865	New Hampshire.....	925	832
California.......	899	823	New Jersey........	869	789
Colorado.........	983	893	New Mexico........	997	884
Connecticut......	896	803	New York..........	896	838
Delaware.........	897	798	North Carolina....	827	758
Florida..........	889	808	North Dakota......	1,068	n.a.
Georgia..........	823	759	Ohio..............	958	877
Hawaii...........	857	783	Oklahoma..........	1,001	890
Idaho............	995	876	Oregon............	908	821
Illinois.........	977	878	Pennsylvania......	885	820
Indiana..........	860	805	Rhode Island......	877	808
Iowa.............	1,088	951	South Carolina....	790	740
Kansas...........	1,045	926	South Dakota......	1,075	1,021
Kentucky.........	985	894	Tennessee.........	999	921
Louisiana........	975	878	Texas.............	868	791
Maine............	890	806	Utah..............	1,022	893
Maryland.........	889	809	Vermont...........	904	829
Massachusetts....	888	795	Virginia..........	888	796
Michigan.........	973	874	Washington........	982	885
Minnesota........	1,028	918	West Virginia.....	968	808
Mississippi......	988	810	Wisconsin.........	1,011	901
Missouri.........	975	879	Wyoming...........	1,017	855

n.a. - Data not available

SOURCE: College Board

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2. Darling-Hammond, Linda. Beyond the Commission Reports: The Coming Crisis in Teaching. Rand Corporation, Santa Monica, California, 1984.

3. Detroit News, "Crisis For Schools. Teacher Shortage Foreseen." August 20, 1984.

4. Ibid.

5. American Association of Colleges for Teacher Education, Task Force on Shortage/Surplus/Quality Issues in Teacher Education, The Impact of Teacher Shortage and Surplus on Quality Issues in Teacher Education, 1983.

6. Ibid.

7. Testimony of David Adamony, President of Wayne State University before the Governor's Commission on the Future of Higher Education. May 1, 1984.

ATTITUDES AND OPINIONS:
MICHIGAN HIGHER EDUCATION, 1984

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MICHIGAN
HIGHER EDUCATION

Summary Report
November, 1984

FRANK N. MAGID ASSOCIATES, INC.

1

The Results

Introduction

This summary reports the results of a statewide survey of Michigan *adults. The survey was designed to determine the perceptions and attitudes of* Michigan *residents toward the state's public higher education system. In particular, the survey was designed to explore possible future policies relevant to* Michigan's *public colleges and universities. The survey consisted of telephone interviews with* 500 *randomly selected* Michigan *residents aged* 18 *and over.* All *interviews were conducted* October 4 *through* October 13, 1984. *Interviews averaged* 27 *minutes in length.*

Attitudes Toward The Functions Of Public Colleges And Universities

Respondents were read a list of functions of Michigan public colleges and universities and asked to rate the importance of each. Clearly at the top of the list in perceived importance are career education and academic instruction. More than nine in ten rate the preparation of students for careers or jobs as a very important function, and an additional eight in ten rate the providing of academic instruction as very important. About three in four rate adult education and make-up or remedial instruction to students as very important. Two-thirds make this claim concerning community services, while six out of ten say conducting research to solve social and economic problems is very important. Fewer than four in ten say that providing opportunities for cultural enrichment is a very important function of Michigan public colleges and universities.

Michigan residents were also asked to rate the performance of the state's public colleges and universities in providing these functions. A majority of respondents give Michigan's public higher education system positive ratings (excellent plus good) for its performance of four functions. Michigan's public institutions of higher education receive their highest ratings for providing college courses for working adults and part-time students and for providing opportunities for cultural enrichment. With regard to the two functions rated as most important, preparing students for careers and providing academic instruction, a majority of about six in ten persons also provide positive ratings. Fewer than half give the state's public colleges and universities positive ratings for conducting research to solve social and economic problems, for providing community services, and for providing make-up or remedial instruction to students. With regard to these latter areas, a substantial number of Michigan adults are unable to rate the performance of the state's public colleges and universities.

Ratings Of The Overall Quality Of Michigan Public Colleges And Universities

A large majority of Michigan residents give the overall quality of the state's public colleges and universities positive ratings. About three in ten rate their quality excellent, while a majority (53%) say it is good. Fifteen percent say it is fair, and only 1 percent rate it poor. In general, those most likely to provide positive ratings are females, persons over 65, residents of out-state media markets, white persons, persons with at least some college education, and persons of high socioeconomic status.

Few Michiganders perceive any decline in the quality of Michigan's public higher education system during the past ten years. In fact, almost half say the system has improved during that time. About three in ten say its quality has remained the same, while a little more than one in ten say its quality has declined. Perceptions of improvement are greatest among persons 18 to 24, residents of out-state Michigan, persons who do not have a member of their household attending a public college or university in Michigan, and persons of low socioeconomic status. Perceptions of decline are most frequent among those under 50, residents of the Detroit metro media market, blacks, and persons of middle and high socioeconomic status.

Given their generally positive ratings of the quality of the state's public higher education system, it is not surprising that most Michigan residents perceive it to be of higher quality than the public colleges and universities in other states. Sixteen percent say the Michigan public higher education system is one of the country's very best, while four in ten say that it is above average. About one in three say it is average. Virtually no one rates its quality as below average in comparison with others. Once again, the most positive ratings are provided by persons over 65, residents of out-state media markets, and whites. In addition, college graduates and post-graduates and persons of high socioeconomic status also are particularly likely to rate Michigan's public higher education system favorably in comparison with those of other states.

Perceptions Of The Quality Of The Faculties Of Michigan Public Colleges And Universities

Michiganders also give the faculties of the state's public colleges and universities positive ratings. Fifteen percent say the faculties at the state public institutions of higher education are excellent, while almost six in ten say they are good. One in five rate them fair, and fewer than one in twenty, poor. Positive ratings are more frequent among persons over 65, residents of out-state media markets, college graduates and post-graduates, and persons of high socioeconomic status. Not surprisingly, those who give the overall quality of the state's public colleges and universities the highest ratings also provide the highest ratings of their faculties.

Michigan residents are also quite optimistic about the quality of the faculties in comparison with their quality ten years ago. In fact, three in ten say it is better, while 45 percent say it is the same. Only 16 percent say it has declined. Perceptions of improvements in faculty quality are most common among blacks, residents of out-state media markets, persons with high school or less education, and persons of low socioeconomic status. In addition, and not surprisingly, perceptions of improvement are greatest among those who give the state's higher education system its highest overall ratings. Perceived declines are greatest among their opposite numbers.

Michiganders also tend to be quite optimistic that the state's public higher education system will be able to compete with public colleges and universities in other states to attract and keep high-quality faculty members. About four in ten say the Michigan system can compete with others very well in this area, while a similar number say it is able to compete somewhat well. Only one in ten say the Michigan higher education system cannot compete very well. Once again, optimism is highest among those over 65, persons with high school or less education, and persons of low and middle socioeconomic status. Those who rate the system's overall quality the highest tend to be the most optimistic in this area.

Ratings Of The Graduates Of Michigan Public Colleges And Universities

Michiganders are also positive about the quality and preparedness of the students who graduate from Michigan's public colleges and universities. Four in ten say these graduates are very well prepared to obtain jobs and work at their careers after graduation. Almost half (47%) say they are somewhat well prepared, while one in ten say they are not very well prepared. Positive attitudes in this area are clearly most common among those over 50, residents of out-state media markets, whites, and persons from households containing current college students. Those having positive attitudes toward the overall quality of the state's public higher education system also rate the preparedness of its graduates most highly.

Few Michigan residents feel that graduates of the state's public colleges and universities are less well prepared for their later lives than graduates were ten years ago. In fact, fewer than one in five (16%) feel this way. Instead, more than three in ten feel the state's public college and university graduates are better prepared than graduates were 10 years ago, while 45 percent say they are as well prepared. Positive attitudes are most common among those under 35, residents of out-state media markets, blacks, persons with high school or less education, and persons of low socioeconomic status.

The graduates of Michigan colleges and universities are also perceived to be in a position to compete quite favorably with the graduates of other colleges and universities for jobs and in their careers. About six in ten say they can compete very well, while three in ten say they compete somewhat well. Only about one in twenty say they cannot compete very well at all. Males, persons over 65, residents of out-state media markets, blacks, and those from households containing college students are most positive in this area.

Perceptions Of And Attitudes Toward The Cost Of Attending A Public College Or University In Michigan

While Michigan residents are generally quite positive about the quality of the state's public colleges and universities, their faculties, and their students, they are far less positive about the cost of attending these schools. A solid majority (56%) say that fewer than half of the state's families can afford the cost of sending a student to a public college or university in the state. About a third say half of the state's families can afford this, while 6 percent say most can. Persons over 65 are most optimistic in this area, while blacks are least optimistic. It is also important to note that those who give the state's public colleges and universities their highest overall rating tend to be optimistic in this area, while those who give them their lowest ratings are least optimistic. It is likely that concern with the cost of attending a Michigan public college or university underpins the negative attitudes that some have toward Michigan public higher education.

While most Michiganders are not positive about the number of Michigan families who can afford the cost of a public education in the state, a majority do feel that their own families could afford it with some financial aid. In all, about two-thirds feel their families could afford to send a student to a public college or university in Michigan with such aid. About one in five say they can afford the cost without aid, while 15 percent say they cannot afford it even with aid. Those most likely to believe they can send a student to a state public college or university without aid are whites, college graduates and post-graduates, and persons of high socioeconomic status. Those who are most likely to perceive a need for aid are high school graduates, persons with a student currently attending a Michigan public college or university, and persons of middle socioeconomic status. Those who are most likely to say they could not send a student to a public college or university in Michigan even with financial aid are blacks, persons with less than complete college education, and persons of low socioeconomic status.

A significant number of Michiganders perceive that the cost of attending Michigan public colleges and universities is higher than it is in other states. In fact, a quarter feel this way. About half feel the costs are about the same, while only one in twenty say such costs are lower in Michigan. Males, college graduates and post-graduates, those from households containing a college student, and those of high SES are most likely to perceive college costs in Michigan to be higher than those in other states.

Not only do most Michigan residents perceive college costs in the state to be high, but they also perceive them to have increased. About four in ten perceive such costs to have increased substantially, while a like number say they have increased modestly during the past two or three years. Fourteen percent say these costs have remained about the same. Virtually no one says they have decreased. There are surprisingly few demographic variations on this item, although college graduates and post-graduates are most likely to have perceived a substantial increase in college costs in Michigan.

Attitudes Toward Higher Education Financial Aid Programs In Michigan

A significant number of Michiganders perceive that students trying to obtain financial aid in order to attend public colleges or universities in Michigan have at least some difficulty in doing so. About one in five say it is very difficult for such students to obtain aid, while four in ten say it is somewhat difficult. Twenty-nine percent say it is not very difficult. Residents of Detroit, blacks, those with less than complete college education, those with a household member currently attending a college, and persons of low socioeconomic status are most likely to perceive difficulties in obtaining financial aid.

For a solid number of Michigan residents, these attitudes toward the costs of attending a public college or university in the state have resulted from personal experience. A significant one-third say that someone in their household has applied for financial aid at some time in the past. Such applications are most common among those 18 to 24, blacks, residents of the city of Detroit, persons of middle SES, and those from households containing current college students.

Among those who have applied for financial aid, a solid seven in ten (about a quarter of all Michigan adults) have obtained it. There are surprisingly few demographic variations in response to this item.

although persons of middle and high SES are more likely to have received such aid than persons of low socioeconomic status. Among those who have received financial aid, the largest percentage (66%) say they received scholarships, grants, or fellowships. An additional 51 percent say they received loans, while one in ten received work-study subsidies.

A significant number of Michigan adults (19%) say that someone in their household has been unable to attend a college at which they had been accepted solely for financial reasons. This is most common among those 18 to 24, residents of Detroit, blacks, and those from households containing a current college student. An even larger number of Michigan residents (37%) say that someone in their household has been forced to withdraw from college or take fewer courses than they would like to for financial reasons. Once again, it is persons under 35, residents of Detroit, blacks, persons with at least some college education, and those from households containing a current college student who are most likely to report this difficulty.

An overwhelming nine in ten Michiganders say that both academic ability and financial need should be the basis on which financial aid is awarded. Only one in ten say that academic ability alone should be the criterion. Given this attitude, it is not surprising that virtually all Michigan residents (96%) say that financial aid should be available to members of lower-income households, that is, those with incomes of less than $20,000 per year. A majority of persons feel that loans, jobs, and scholarships should be available to students from lower-income families. In addition, almost eight in ten Michiganders feel that financial aid should be available to students from middle-income families (those with incomes of $20,000 to $50,000 per year). Only among those over 65 and of low socioeconomic status do a significant number feel that aid should be denied to middle-income persons. A majority feel that loans and jobs should be available to students from middle-income families. However, fewer than half feel that scholarships should be awarded to such persons.

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While most Michigan residents feel that financial aid should be available to low- and middle-income students, fewer than half (38%) say that such aid should be available to students from high-income families. Only among those with post-graduate education, those from households with current college students, and those of high socioeconomic status do a majority favor financial aid for high-income students. Among those favoring financial aid for high-income students, a majority say that loans should be awarded such students. Fewer favor financial aid in the form of scholarships or jobs for high-income students.

Attitudes On State Public Higher Education Finance

There seems to be little consensus among Michigan residents on the best way for the state to fund its public colleges and universities. About three in ten say Michigan should raise taxes if this is the only way for the state to avoid tuition increases and deep cuts in the amount of money it spends on public colleges and universities. A quarter say the state should spend the same amount of money on public colleges and universities that it does now, but that it should raise tuition substantially instead of raising taxes to accomplish this. Sixteen percent say Michigan should make deep cuts in the amount of money it spends on public colleges and universities in order to prevent any increases in taxes and tuition. Fifteen percent say the state should cut the amount of money it spends on public colleges and universities and raise tuition instead of raising taxes to make up the difference.

Respondents were also read a list of areas of concern to public colleges and universities in Michigan and asked to indicate whether spending should be increased or not increased in each area. Michiganders most desire seeing spending increases on projects to improve the state's economy, hiring and keeping good faculty and researchers, and improving teaching and instruction methods. More than eight in ten want increases in these areas. Three-quarters of Michigan adults want increased spending to increase financial aid to students and to address the needs of handicapped persons, minorities, and women. About two-thirds want increased spending to repair and maintain existing buildings on college campuses, to permit more research to be done at Michigan's colleges and universities, and to provide more money to public colleges and universities in order to freeze tuitions. A bare majority want increased spending to increase the number of college-age students who attend college in Michigan. Only a third want increased spending to raise faculty salaries, while a quarter want it to build new buildings on college campuses.

Among those who favor a tax increase, most would prefer to use the current 10¢ per pack increase in the state's cigarette tax for this purpose. Four in ten favor an increase in the state sales tax, while one in five would like to see the current state income tax increase reestablished to finance increased spending on higher education. Increases in the cigarette tax are most favored by those under 65, whites, and persons of middle and high socioeconomic status. An increase in the state sales tax is most favored by females, persons over 65, and persons of lower socioeconomic status.

Attitudes Toward Specific Types Of Public Colleges And Universities In Michigan

An overwhelming seven in ten Michigan residents feel the state has about the right number of public colleges and universities to meet its current needs. About one in ten each say Michigan has too many or too few public colleges and universities. A solid majority of most major demographic groups say the state has about the right number of colleges and universities. Residents of Detroit, blacks, and those who give the state's public colleges and universities their lowest ratings are most likely to feel there are too few public colleges and universities in Michigan. By contrast, college post-graduates and persons of high socioeconomic status are most likely to feel there are too many.

Attitudes Toward The Economic Role of Higher Education In Michigan

A large majority (more than eight in ten) agree that public colleges and universities in Michigan have a significant role in strengthening the state's economy, and that a high-quality system of public colleges and universities is necessary to attract new businesses to the state and keep old ones. In spite of these positive attitudes, however, there is very little consensus among Michigan residents as to precisely what the role of the state's colleges and universities is in strengthening Michigan's economy. The largest number of persons say the primary way in which Michigan's public colleges and universities can help the state's economy is by providing proper instruction to students, especially in the area of high-tech industries.

In addition to aiding the state's economy, a large majority of Michiganders also believe that the state's public colleges and universities should provide more programs for women, minorities, handicapped persons, and persons older than normal college age. About seven in ten favor programs aimed at such persons.

Attitudes Toward Remedial Education

A plurality of Michiganders (43%) believe that remedial instruction for college students lacking basic skills should be provided through adult education at public high schools. Three in ten say such remedial instruction should be provided by local community colleges, while one in five feel that the college or university in which the student has enrolled should provide it.

Willingness Of Michigan Residents To Have Their Children Attend A Public College Or University In Michigan

An overwhelming 87 percent of all respondents say they would want their own children to attend a public college or university in Michigan. There is virtually no demographic variation in response to this question. The University of Michigan and Michigan State University are the state institutions that the greatest number of respondents would like their children to attend. Half say they would like their children to attend the University of Michigan, while 45 percent say they would like them to attend Michigan State University. A little more than one in ten would want them to attend Wayne State University, while just under that number would want them to attend Central Michigan University or Ferris State.

Perceptions And Attitudes Toward The Location Of Policy-Making For Michigan Public Colleges And Universities

About four in ten Michigan residents believe that the state government most strongly controls and makes policy for public colleges and universities in Michigan at the present time. A like number feel that decision-making is currently the preserve of the individual colleges and universities. Those most likely to feel that the state government is most important in making policy are those 18 to 24, residents of Detroit, blacks, persons with some high school education, high school graduates, and persons of low socioeconomic status. Those most likely to feel that the individual colleges and universities are most important in making policy are whites, persons with at least some college education, persons of middle and high socioeconomic status, and those from households with a current college student.

A solid majority (59%) of those who specify the policy-makers say the individual colleges and universities should have more control in making policy than they do at the present time. A quarter say there really should be no change in the present location of policy making. Only one in ten say the state government should have more control. Those who would most want to see the individual colleges having more control are persons under 35 and those from households containing a college student. Those who want the state government to have more control than it does now are residents of Detroit and blacks.